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THE
MARYLAND FARMER:
DEVOTED TO
Agriculture, Horticulture, Rural Economy & Mechanic Arts.

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HOMESTEAD PAPERS---No. 6.

When the house itself is nearly completed its surrounding should be so arranged as to give character and harmony to the whole design. The aim of the farmer, in this respect, is very different from that of those who can afford to make the embellishment of their ground the main object. The Farm House must be in accordance with the conditions of the farm life—usefulness first, and beauty of adornment being secondary. Under ordinary circumstances, neither much money or much labor can be spared. The men of the family have generally sufficient, and more than sufficient, to occupy them the day through. The women of the family find also the indoor work press heavily upon them—and, indeed, during the busy season all their time is unceasingly employed. The wife and daughters of a farmer have but little leisure, and all extra labor must therefore be kept down to the lowest possible point. No extensive lawns or groups of shrubbery, or elaborate flower beds can be, nor need they be, undertaken—and yet the grounds immediately around the house, on any farm, may show evidences of neatness, taste and culture, without taking from the most immediately useful and practical work of the farm, any labor that is its due. The lawn attached to the dwelling must of course be limited in extent; the flowers, chiefly perennials, and such as thrive vigorously with only moderate care; and the trees and shrubbery must be planted at those intervals which can be spared from other and more pressing duties. The lawn once properly made requires, however, thereafter but little attention, and if the trees and shrubs are well mulched after planting, they will soon start and grow freely, if the soil is good and the planting has not been too deep. As to the flowers, there is usually in the household, at least one person with whom their culture will be a labor of love. Some such surroundings as these are absolutely necessary that the house may have its proper completeness.

A modern writer says on this subject: "A dwelling, no matter what the style, standing alone, either on hill or plain, apart from other objects, will

hardly be an attractive sight. As a mere representation of a particular style of architecture, or as a model for imitation, it might excite our admiration, but it would not be an object on which the eye and the imagination could repose with satisfaction. It would be incomplete unless accompanied by such associations as the eye is accustomed to embrace," and which give a home-like natural grace to the scene. "But," he adds, "when we group around the dwelling subordinate structures, and trees and shrubbery properly disposed, the entire scene becomes an object exceedingly interesting to contemplate."

The groundwork of any embellishment of the surroundings of the dwelling must be first laid by a judicious arrangement of the space devoted to the lawn. This should be made to extend not only across the front but for some distance on both sides of the house. In perfecting the plan the situation of the house, whether the approach is direct or indirect, must be taken into consideration. The form of the lawn, and the area devoted to it, must be determined by the character of the house, the topography of the ground, and the proximity or remoteness of the farm buildings; but in all cases a perfectly square box-like enclosure should be avoided. It would be better, if that were possible, that no fences should be visible, as circumscribing the lawn, but the latter should appear to melt into adjacent fields. But as fences are absolutely necessary to protect the immediate vicinity of the homestead from the depredations of the cattle when they are turned out to graze, the best thing that can be done is to conceal them from view on the approach road and from the windows of the house by belts and clumps of shrubbery judiciously disposed. No trees of large growth should be planted very near to the house, but low growing shrubs are at all times admissible. There should be on the southern and eastern fronts a clear open space to allow the rays of the morning and midday sun to penetrate freely, mellowed and softened by the broad shade of the porches with which the house should be liberally supplied. To the north and northwest of the house the planting ought to be very dense to break the

force of the winter winds and give that backing of foliage to the dwelling which adds so much to its beauty. In planting, whether in groups or masses, and whether with trees or shrubs, it is a very great mistake to plant too closely. They must have ample space to spread their limbs in a natural manner, and although at first they will appear to be arranged too widely apart, the space will be well filled after a few years of growth. The improver must not consider the young tree as it is, but must project his thought forward through a series of years, and estimate what it will become when it has attained its growth. Close planting is the great error of our amateur improvers. They seek for immediate effects, and thus destroy, by crowding, the natural beauty of the clumps and masses. If they were men of nerve and judgment, and especially of nerve, close planting at first might be recommended; but only on condition that as the trees grew and spread one-third of them should be rooted out to allow of the freer growth of those that remained. But how few people are there who have the heart to destroy what they have planted and tended so diligently?

HALL'S POTATO DIGGER.

A couple of weeks ago, we were invited to be present at a trial of Hall's Potato Digger, on the grounds attached to the residence of E. Whitman, Esq., on the outskirts of the city. Several other persons were present, to the number perhaps of a dozen all of whom were gentlemen of intelligence, and some with a practical acquaintance with the manufacture of agricultural implements. About six o'clock in the evening the machine was taken out into the grounds and two horses attached. Its form of construction is the simplest imaginable. It consists of a triangular steel plate, entirely flat, except at the point, where it is slightly curved, and is fastened diagonally to the beam. On entering the potato ridge the earth of the row is carried with great precision up the diagonal plate, and, passing over, falls on a hinged iron grating, beneath which is a deeply notched wheel. This wheel travels in the furrow and as it revolves the notches catch a transverse iron bar and thus give a sifting motion to the grating; the earth falls through the open spaces finely pulverized, whilst the potatoes pass over the grating and are left clean and clearly exposed on the top of the soil.

The trial was in every respect a success. The soil, a heavy clay loam, had been packed hard by the dry weather, and offered unusual resistance to the operation of the Digger. But the horses moved easily and without strain, and the work was so well done that it left the potatoes scattered along the furrow and needing only hands to gather them.

To those who know how much labor is required to gather potatoes after the plough, we need not describe the saving effected by Hall's Potato Digger. Under the old method the ridge was simply split and then the hoes had to be put in requisition to find the potatoes. As they were found it was necessary to pick them up separately and throw them into heaps alongside. These heaps had again to be collected together and put into baskets for carting off. By the use of the Digger all this labor is spared; no hoes are necessary, but the gatherers follow in the furrows and pick up the potatoes. How many hands this new machine will save we are not prepared to say, but where a large field of potatoes is planted and the soil is in good condition, we feel confident that one machine would keep from fifteen to twenty gatherers busily employed. The other merits claimed for it, and we believe justly, are first, that the vines do not choke it where the potatoes are ripe, and next, that it leaves the soil in good condition for a subsequent crop. Certainly in the case in which we witnessed the trial the ground was well pulverized to the depth to which the diagonal plate penetrated it, and that, of course, was below where the potatoes had grown.

Level Cultivation vs. Hilling Corn.

Most farmers practice level cultivation, which is preferable to making hills where the stalks of corn are growing. Hon. Horace Greeley says on this subject: "I disclaim all pretensions to ability to teach western farmers how to grow Indian corn abundantly and profitably, while I cheerfully admit that they have taught me somewhat thoroughly worth knowing. In my boyhood, I hoed corn diligently for weeks at a time, drawing the earth from between the rows up about the stalks to a depth of three or four inches, thus forming hills which the west has since taught me to be of no use, but rather a detriment, embarrassing the efforts of the growing, hungry plants to throw out their roots extensively in every direction, and subjecting them to needless injury to drouth. I am thoroughly convinced that corn, properly planted, will like wheat and all other grains, root itself just deep enough in the ground, and that to keep down all weeds and leave the surface of the corn-field open, mellow, and perfectly flat, is the best as well as the cheapest way to cultivate corn. And I do not believe that so much human food, with so little labor, is produced elsewhere on earth as in the spacious fields of wheat and corn in our grand Mississippi valley."

Good farmers see that their fences are well repaired, and their cattle are not grazing in the meadows or grain fields or orchards.

Our Agricultural Calendar.

Farm Work for September.

We are now once more entering upon the season of hard and earnest work. All the preliminary preparations for the fall seeding should by this time be well advanced, so that the work may proceed steadily and systematically until it is finally completed. We again urge upon our friends to pay less regard to the number of acres seeded down to wheat or rye than to the condition of the soil on which these crops are to be grown. Not a single acre should be put under the plough that is not at least in tolerably good heart, or that will not, if the season prove favorable, yield a profit at harvest over all expenses. Our besetting sin is overcropping. We are too apt to make up for a partial exhaustion of the soil by cultivating a larger number of acres. The theory is to make up by extent of acreage for deficiency of product. There never was a greater fallacy, for it implies an extra cost for labor, and a further exhaustion of the soil.

If manures or fertilizers are to be had, and there is no good farmer that fails to make provision for one or the other, it is better to apply them to a limited area, where they will produce their full effect and leave the soil in condition to carry the subsequent crops in the system of rotation, than to scatter the manure thinly over a large surface where it scarcely compensates for the crops taken off, and where its effect at best is only temporary. Let it only be understood that twenty bushels of wheat to the acre on ten acres is more profitable to the farmer than ten bushels of wheat on twenty acres, and the first step in the career of steady improvement will have begun. The work for the month is as follows:

CULTIVATION OF WHEAT.

As to Soil.—The best soil for wheat is a deep loam inclining to clay with a dry subsoil. Deep ploughing and thorough pulverization are absolutely essential to the production of heavy crops, but no amount of tillage will compensate for the want of fertility in the soil itself. If any of the organic or inorganic constituents necessary to the growth of wheat are absent in the soil the product will be correspondingly less. What the inorganic constituents are in every thousand pounds weight of wheat straw, and in every thousand pounds weight of the grain may be seen from the following analyses by the German chemist, Sprengle. The straw and wheat reduced to an ash gave the following results:

	Grain of Wheat.	Straw of Wheat.
Potash.....	2.25	0.20
Soda.....	2.40	0.50
Lime.....	0.96	2.40
Magnesia.....	0.90	0.82

Alumina.....	0.26	0.90
Sulphuric Acid.....	0.50	0.37
Silica.....	4.00	23.70
Phosphoric Acid.....	0.40	1.70
Chlorine.....	0.10	0.30

Pounds of ash.....	11.47	35.18
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As to Manures.—There is no better fertilizer for wheat than a heavy crop of clover turned under, and for the good and sufficient reason that clover contains in its roots and stems all the elements of food that the wheat plant requires. There is a difference of opinion among farmers with respect to the best time of turning under clover. The English practice is to let the clover lie on the ground until the time approaches for seeding wheat. The clover is then turned under not less than eight inches deep, and the land allowed to rest for about two weeks before sowing. The seed is then sown, and after the harrow has been passed twice lengthwise of the furrows, the roller finishes the operation. In our drier climate, and in heavy soils, this practice may not be the best; although Bordley long ago recommended it warmly. If barn-yard manure is used, the preferable way is to furnish it liberally to the preceding crop, as fresh manure is apt to produce rust in the wheat.

Composts, &c.—Either of the following mixtures will be found sufficient for an acre of wheat on soils in moderately good condition:

1st. 250 pounds of ammoniated super-phosphate; to be ploughed under before seeding.

2d. 6 two-horse loads of stable manure; 2 bushels of dung salt; 10 bushels of ashes; 5 bushels of ground bones; ploughed in.

3d. 5 two-horse loads of rich barn-yard manure; 10 two-horse loads of woods' earth, marsh weed or refuse fibre of any sort; 5 bushels of wood ashes, unleached; 5 bushels of crushed bone, made very fine; mix the above layer by layer, let it stand in the heap until it ferments, then break down, mix well, cart out, spread broadcast and plough under.

Preparation of the Seed.—In preparing the seed make a brine strong enough to float an egg. Pour the wheat into it, stir it well, and skim off all that floats to the surface. Then take out the grain, spread it on the barn floor to drain, and sprinkle it with plaster after the moisture has disappeared and the grain is simply damp.

Depth of Seeding.—The best depth of seeding is from one to two inches.

Method of Seeding.—The Drill is to be preferred as it saves seed and puts it in the ground more uniformly.

Time of Seeding.—From the 15th of September to the 7th of October.

Quantity of Seed to the Acre.—Drilled, 5 pecks—broadcasted, from 1½ to 2 bushel

Spring Management.—Keep the water furrows

open, and when the frost is out of the ground sow separately over the field a peck of clover seed and one bushel of orchard grass.

CLEANING GRANARIES.

See that these are thoroughly cleansed by fuming with sulphur, and then whitewashing the entire interior—floors, walls and ceilings.

SOWING RYE.

Rye should have been seeded last month—for suggestions in regard to this crop see the last number of the FARMER. We restate the points briefly:

Best Soil for Rye.—A rich sandy loam.

Quantity of Seed to the Acre.—If seeded after August not less than three pecks.

ORCHARDS.

As soon as the planting season is over, and the apples gathered, spread over the orchard a dressing of compost, and either heavily harrow, or plough it in lightly. Where lime has not been applied, a peck of slacked lime worked in carefully around each tree will greatly increase its vigor. The rough bark should be scraped off and the following mixture applied to the trunk and larger limbs with a whitewash brush: 1 lb. of flour of sulphur, 1 quart of fine salt, 1 gallon of soft soap. Incorporate these together and use.

Preparing Grass Sward for Corn.

It is a good plan, where liming is to be done, to spread it over the grass sward intended to be broken up for corn next spring—upon light loamy soils twenty-five bushels of hot, or fifty bushels of slacked lime heavily and thoroughly harrowed in during the Fall, will prove of great service. If, however, the land is a stiff clay, plough late in the Fall and spread the lime broadcast over the rough surface.

MEADOWS.

Where these show signs of failing top-dress with twenty bushels of ashes, mixed with 2 cwt. of finely ground bone to the acre—harrow and cross harrow—and finish off with the roller.

MIXTURE FOR STOCK.

Mix equal parts of oyster shell lime, salt and sifted wood ashes, and give two ounces of the mixture to each head of stock twice a week.

SALTING SHEEP.

Place under cover a full supply of rock salt to which the sheep can have ready access at all times.

SETTING OUT ORCHARDS.

Preparations should now be made for setting out young orchards next month. Great benefit will be derived from the use of the subsoil plough, in addition to deep ploughing, where young trees are to be set out.

Cellars and Out-houses.

See that these are well cleansed and whitewashed.

Cattle Yards and Pig Pens.

Keep these constantly supplied with rough material, to be worked up into manure.

Ditching and Draining.

This work may now be done to advantage.

Garden Work for September.

Spinach.—Thin out the spinach already advanced for autumn use, and give the plants a careful hoeing. For a subsequent supply prepare another bed, manure it heavily with rich and well rotted manure, spade deeply, and, after thoroughly pulverizing the soil, sow the seed in drills one inch deep and nine inches apart from drill to drill. Sow at any time from the first to the middle of the month. The prickly or fall spinach is the hardiest variety. After the plants are well up, thin them out to stand four inches apart along the drill.

Lettuce.—Set out lettuce that is large enough from the seed bed. For winter use fresh seed may be sown either in cold frames or in the open air. If in the open air the plants will need a light covering as soon as frost sets in to protect them through the winter.

Radish Seed.—Radish seed of the turnip rooted variety may be sown from the first to the tenth of the month, but not later.

Endives.—Set out endive plants. The curled green is the hardiest variety. But there is not now the demand for this vegetable there was formerly, and its domestic use is becoming rare. In seeding let the rows be fourteen inches apart, and the distance between the plants twelve inches. The soil should be rich and mellow.

Celery.—Earth up celery on dry days; avoid covering the hearts of the plants, and keep them liberally supplied with water after sunset.

Turnips.—Thin out and hoe these, leaving the plants six or eight inches apart, keeping at all times the soil loose and free from weeds.

Cabbages.—About the middle of the month prepare by heavy manuring and deep spading a bed for the reception of cabbage seed. Rake it well, mark it off into separate beds, and in each division sow the seed of Early York, York, Battersea, or any other choice variety of cabbage. Sow moderately thick, rake all evenly, and finish off by pressing down the earth lightly with the back of a spade. In dry weather water freely. Towards the close of October the plants will be ready to set out.

Cauliflower.—Prepare a bed as advised for cabbage and sow cauliflower seed, to be transplanted into cold frames when the plants are large enough, and where they are to remain throughout the winter.

Siberian Kale.—Manure heavily and spade deeply a bed for Siberian Kale. Sow the seed thinly in drills and cover well. Sow between the first and tenth of the month.

Pot and Medicinal Herbs.—Towards the close of the month all sorts of pot and medicinal herbs may be set out during moist weather.

AGRICULTURAL CHEMISTRY.—I.

IMPROVEMENT OF THE SOIL BY MECHANICAL MEANS.

It must be evident to every one that, other things being equal, the permanently productive capacity of the soil will bear a direct proportion to its depth. By deepening the soil the cultivator can change the character of the land itself, and also alter both its physical qualities and change its chemical constitution, and thus fit it for bearing other kinds of plants than those which would be found naturally growing upon its surface, or if those should be considered desirable, he can very easily increase their productiveness. But he cannot deepen his soil without increasing his labor, which is the first consideration of the farmer, especially here where it bears so high a proportion compared with other countries; and in no other branch of business is the strictest economy so essential to success as is the one we are treating of. But here science comes to his aid and warrants the outlay, and suggests that if he deepen his soil his plants will have a wider range for their roots in search of food which will give increased growth, that the portion of the subsoil brought to the surface by deep plowing, will receive the ameliorating influence of frost and rain, by which previous, perhaps hurtful, properties are altered and washed out, that in times of drouth those roots can seek the grateful moisture which is being condensed from the atmosphere within its cooler depth; and he finds his account in the increased product of his crop.

The same science will suggest the frequent stirring of the soil to expose fresh particles to atmospheric influence, the use of the subsoil plow, and, where necessary, draining, which has been attended with so much benefit wherever employed. Again, the cultivator can improve his soil mechanically by the use of a different kind of earth from the one to be improved. Fifty loads of stiff clay to the acre, applied in the fall, to a light sand, to be plowed in in the spring, and one hundred loads of sand applied to heavy clay land, and spread any time before plowing, will be found to have very beneficial effects, and this mixing of soils, where the necessary materials are not too far apart, (which very frequently is not the case,) affords one of the cheap means of improving the soil, especially as the operation can be carried on at such times when the hands and teams might otherwise be idle. A still further advantage attending this method is, that twenty per cent. less of manure to the acre will be attended with equal results in the production of a crop. There are other means of mechanically improving the soil, of which we may take the opportunity to speak on some future occasion,

THE PONDERABLE CONSTITUENTS OF THE ATMOSPHERE.

Nitrogen.—It is not a little singular that this element, four-fifths of which go to make up atmospheric air, is sometimes called "azote" in chemistry, from its incapability of supporting life without the presence of oxygen. It is contained largely in all animal substances, and is said to be exhaled from the leaves of certain plants, but its great importance in agriculture arises from its affinity for hydrogen, thus forming ammonia, the most powerful stimulant of vegetable growth. It is also found in combination with the alkaline bases of potash and soda, forming nitrates of them, both of which have decided effects as manures. In practice, if we wish to produce the higher order of plants, especially those containing gluten, we find it necessary that nitrogenized manures should be applied to the soil in addition to those which may be indicated by their inorganic constituents.

Oxygen.—The effects produced by this gas are equally numerous and important. It supports animal life by means of respiration, promotes the germination of seeds, and is absorbed by the leaves of plants during the night and thrown out by them during the day time. By its combination with the various metals the oxides of them are formed. It is likewise the necessary agent of combustion, and its presence is necessary to the decomposition of all animal, vegetable and mineral substances.

Carbonic Acid.—This gas, which is produced so abundantly by fermentation, respiration, combustion and the decay of animal and vegetable matter, is much heavier than the other gases, and is always present in the atmosphere, according to the sources of supply, but as a general rule, only in such a proportion as is not inimical to animal life. Carbonic acid is being constantly absorbed, with the surrounding air, by the leaves of plants; the carbon is appropriated by the plants to support their structure and increase their growth, and the oxygen is thrown out into the atmosphere, to restore what, by the process of vegetation, was abstracted. A solution of this gas with rain-water forms an active solvent of the silicates in the soil, which can then be appropriated by the roots of plants.

Water.—In the atmosphere water appears as an elastic fluid and plays an important part in the process of vegetation. The quantity of aqueous fluid varies according to temperature. When this is reduced it causes the fluid to be condensed and deposited in the state of dew, and this cool moisture at night in summer restores the balance to the vegetable system which has been depressed by too much heat during the day.

THE IMPONDERABLE CONSTITUENTS OF THE ATMOSPHERE.

These fluids, which occupy such an important

part in nature's economy, are light, heat and electricity; without their influence the conditions requisite to bring forward the productions of the earth would not be complete, and their absence would bring back that state of things which existed when the earth was without form and void, and darkness enveloped its surface.

Light.—This subtle fluid is said by the philosophers to owe its origin to the vibrations of an exceedingly attenuated medium, throw into waves by luminous bodies of every kind, and which, filling all space, and being diffused through the substance of the most solid bodies and occupying the spaces between their more substantial molecules, transmits and modifies these vibrations and confers upon substances transparency or opacity, color, and all other properties of acting upon light which they possess. Under ordinary circumstances, light is always associated with heat, and the sun, from which the surface of the earth derives its warmth, is also the natural source of light.

The importance of this fluid on vegetation is seen in the condition of plants raised in the shade; they being nearly or quite without color, perfume or taste, and even in texture destitute of that firmness which is acquired by direct exposure to the sun's rays.

Without exposure to the direct solar rays, plants do not freely emit oxygen, and it is known, also that flowers rarely produce fruit if raised entirely in the shade. According to the observations of Decandolle, the *sensitive plant*, if carried into the shade, closes its leaves, as during the night, and reopens them immediately on being again brought into the open light, or even that of a lamp. The discoveries of Herschel have proved that among the various rays constituting a pencil of light, there are some that possess nearly exclusively the property of being luminous, others that of affording heat. Wollaster and Ritter have added to these important facts, that there is a third species of rays, which appear to act upon bodies as powerful chemical agents.

Heat.—There exists in the atmosphere, as well as in all bodies, an imponderable fluid, not equally imparted to them, which renders their state solid, fluid or gaseous, according as the affinity between their particles and the fluid of heat is more or less strong.

Under the same degree of atmospheric temperature, all bodies in their natural state are penetrated by unequal quantities of this fluid of heat. The conditions in which the substance exists are two, of very different character; the one is called *sensible heat*, the other *latent heat*. Sensible heat is that condition when the heat retained or lost by a body is attended with a sense of increased or diminished

warmth; when the heat so lost is not perceptible to us it is called latent heat. Water contains the most latent heat, and changes from a liquid to a solid state most slowly; ice is the solid which absorbs most heat, and requires most time to liquefy. It is evident that this property of water renders the changes of season much less sudden than would otherwise be the case. For instance, if water passes from 32° to 31° and became solid by losing only the same quantity of heat as it gives out in cooling, from 33° to 32°, the change of season would be so rapid and uncertain, as to interrupt almost entirely the cultivation of the soil, to say nothing of the injurious effect on health that would be produced by these vicissitudes of temperature. By a wise and beneficent arrangement, each particle of water in freezing becomes a source of warmth to all around; and by mitigating the severity of cold there can be but a comparatively small quantity of water rendered solid. Again, on the return of a warmer season, a sudden liquefaction might prove equally injurious; but the gradual melting of the ice and snow tempers the change so the functions of those plants and animals to which a sudden transition might prove fatal.

Electricity.—This is another of the imponderable fluids contained in the atmosphere, undergoing frequent changes and producing numerous phenomena. It can be developed by friction and transmitted by contact, is accumulated in bodies when they are insulated, is communicated in the same manner as heat when bodies which are non-electric approach those which are electric.

When accumulated electricity passes through various substances heat is generally developed. The most intense artificial heat with which we are acquainted is produced by the agency of the electric or galvanic current. Passing by the theories entertained by different philosophers concerning electricity, we come to the consideration of its sources. That which is of the greatest importance in nature from the universality of its action is the one derived from the change of the state of aggregation.

When a body passes from a liquid to a solid, or from a liquid to a vaporous condition, or in reverse order, from being solid or gaseous becomes liquid, disturbance of the previous electrical equilibrium results.

Our atmosphere is almost continually in an electrical condition, as at all ordinary temperatures evaporation takes place from the surface of all the water of the globe, and the vapor produced carries with it the immense quantity of electricity, which is thus set free and becomes mixed with the air.—The great body of vapor when condensed by the more elevated and colder regions of the air, collects into that condition which constitutes clouds, and

therein is thus concentrated all the electricity evolved by evaporation at the surface. Electricity is evolved in many cases of chemical combination and decomposition, as is proved when charcoal is burned, also when hydrogen burns in air.

There is thus in the combustion of our ordinary fuel a vast source of electricity in the atmosphere, in addition to that produced by water in evaporating. It has been found that the evaporation of sea water is attended with greater result, in this respect, than when the water is perfectly pure. A peculiar state of heat and moisture in the atmosphere, familiarly known as *mugginess*, and which usually precedes thunder, is particularly conducive to the abstraction of electricity from animal bodies, as well as surrounding objects, as is evinced by that languidness experienced at such times. Silk being an excellent non-conductor of electricity, it has been recommended to be worn next the skin by those persons of weakly habit who particularly suffer in consequence of the abstraction of this important element of vitality from the animal economy.

When this fluid is abundantly diffused throughout the atmosphere, it exercises a powerful influence over vegetation, excites the action of oxygen and determines the condensation of the aqueous fluid. In the summer time this condensation frequently resolves itself into a thunder storm; the clouds which have been produced from the rapid evaporation of land and water become intensely electric, and, being attracted to each other or some prominent object on the earth, the discharge of electricity takes place with the brilliancy and destructive agency of the lightning, the thunder rattles, the rain descends, bringing with it the unwholesome compounds of the air, now broken up and intended to serve the purpose of aiding vegetation; the earth having received back the necessary portion of moisture the clouds become dissipated, the sun sheds forth its genial influence, and nature, all refreshed, again gladdens us with its smile.

(To be continued in our next.)

The above we copy from the *Journal of Applied Chemistry*, a very valuable scientific journal.

CHEAP MOSQUITO-BAR.—There is a cheap mosquito-bar in vogue among the plantation hands and boatmen in some parts of the South, which answers every purpose to the letter; it is common petroleum. A small quantity is dropped on a piece of cotton, and then squeezed out as dry as possible; after which the cotton is rubbed over the face and hands. No mosquito will alight where the scent has been left. I have tried it and then exposed myself to clouds of them, on various occasions, without experiencing the least annoyance. Thousands of them would hover within an inch of my face, and sing by the hour, but none would dare touch.—*Cor. American Entomologist*.

Hauling Manure.—How to Save Labor in Composting.

The great objection to barn-yard manure is the labor in hauling it—so much water must be carried.

When made into compost, with muck or ground, the same objection holds—there is the weight to carry.

A good way to somewhat lessen this labor is to convey your manure where the material is with which it is to be composted—to the muck pile, or to some place convenient to the field to be manured where soil is to be used. A mellow knoll is a good spot. The dry, yellow, drift soil is perhaps not excelled, as it usually contains a fair proportion of clay.

Where there is much sand in the soil, or the land is a bog or field of vegetable matter, nothing is so good as a clay bed to throw to the air and pulverize, aided by an alkali. Here the clay becomes a benefit almost as great as the manure. The work that is done in preparing and hauling is not, as in the case of water, to no effect, but a real benefit is derived from the clay, as also from the soil of the knolls. The clay will give consistency and durability to the land. It will enable it to hold its fertility—make compact and more moist—not hard or wet, but a more substantial, loamy soil.

Here, then, is a benefit in drawings, which is not the case with the water. Draw, if possible, when there is the least water in the manure, compost as stated, and apply where the manure is, or near it. Thus we have it at our own option (on many farms) to use clay for our sandy or vegetable soil, or vegetable matter (muck) for our sand and clay land. We should haul our long manure ere it is saturated with water. A little of the juice of the stable or the barn-yard will make it the more portable without adding much to the weight. As to the pure dung of the stables, this is in general better conveyed direct to the field, there to form a compost with the land it is intended to enrich. But for compost heaps, the way prescribed is the best.—*Ulrica Her.*

KEEPING GRAPES FRESH FOR WINTER USE.—If you desire delicious, fresh grapes in winter or even up to the next spring, they can be had by a very little care and expense. Pick the bunches only in a dry, warm day, and place them in a cool, shady place for at least three days; then commence to pack them in paper boxes that will hold about ten pounds. Between each layer of grapes place a single thickness of newspaper; the boxes should not contain more than three layers in thickness. Then place in a cool, dry room—not in a cellar, for the natural dampness there will cause mould and decay. In this way the past very damp unfavorable season we kept Concord, Delaware, Hartford and Diana, the last being in good condition in March.—*Rural World*.

IMPROVEMENT OF WORN OUT LANDS BY THE USE OF PEAS AND CLOVER.

BY H. K. BURGWIN, ESQ.

There are large bodies of land lying in Eastern and Middle Virginia and North Carolina, which have been so much reduced by continued cropping, planting tobacco, cotton, and sowing oats, as no longer to pay cost of cultivation, and are "turned out as waste lands."

These really still possess a good share of fertility, and by a very moderate expenditure of labor, and attention to common sense principles of agriculture, may be reclaimed, and have their productiveness increased from 100 to 150 per cent. They can be made truly valuable, and I do not hesitate to say, as the results of my experience that they will give a greater profit in course of five years' cultivation than can be driven from any except our rich river lands.

This is a method I have adopted, and by which I have increased the products of such lands from 1½ to 2 barrels of corn to 4 barrels per acre.

The increase of wheat is proportionably greater than that in corn.

My system of culture is substantially as follows:

If the "broom straw," in which these waste lands always grow up, retains any sap, by which when turned under, fermentation will ensue, and cause the straw to rot, let the land *as it is*, be plowed with the largest size plow, drawn by three or four horses running as deeply as possible—say, not less than ten inches—and turning everything under.

If the straw has no sap, it will not rot in a year; and in that case, burn it off, and plow as before. If possible, follow each plow with a subsoil plow, and go 6 or 8 inches deeper. This will make the stiff clay, which almost everywhere underlies our land, more open to the genial influences of the sun and air and enable it to get rid of the surplus water of winter, and heavy rains in other periods of the year.

About the middle of June, following, when the weeds are about half grown, and before they have formed their seeds, sow the land broadcast at the rate of a bushel per acre, of any of the numerous varieties of peas among us, except the "blackeye," which having very little vine, affords little shade. In all cases, I prefer those which have the most vine and ripen earliest. When the land has much weeds or grass upon it, turn under the peas with any kind of plow running not over three inches deep.

If the land is bare of weeds, I prefer covering the peas with a large, heavy harrow, running both ways—first length-wise, and then across the beds.

As it is important to give the peas a start over the

weeds and grass, I soak them six hours in water, and rub them in plaster of Paris; and when they begin to leaf and branch, say, when 12 inches high, I sow plaster at rate of a bushel per acre.

This stimulates their growth, and they overpower the weeds and grass.

When about half the peas are ripe—not "half ripe"—hogs should be turned in to trample and cut up the vines, otherwise it is extremely difficult to turn them under. So soon as this can be done the hogs should be taken off, for the peas are useful for shading the land from the summer's sun—a most important matter in all improvement—and giving to the thin soil a large mass of vine leaves and other vegetable substance.

From experience in the use of both I think peas but little inferior to clover (to which family, indeed, it belongs,) as a specific manure for wheat.

After this mass of vine has been turned under, you have a "pea ley," over which sow a bushel and a half of wheat per acre, and six quarts of clover seed. Harrow both in thoroughly, and let the work be finished by the middle of October. The return will, of course, depend somewhat on the quality of the "old field;" but I venture to affirm, that it will amply repay all labor and outlay, and astonish by the great results apparently from so trivial a cause.

I am familiar with the great increase of crops from the use of lime and clover, and I do not mean to compare the two methods of renovating land as equal; but, where *lime* is not to be had, there is no application that can compare for a moment, on well drained land, (if it need draining) with plaster, peas and deep tillage.

No gold mine is so valuable as a good marl pit. I am, however confining myself to interior districts, where neither lime nor marl can be had.

After the wheat comes off in June following, the clover, its sown early in Oct., will have grown so as to shade the land pretty well, even on the waste lands I speak of. It should not be grazed the first year, at all; in the February after, top dress it with all the manure to be had, not forgetting to apply all the *old ashes* within reach. This time of the year, (winter) is best for applying manure in our country, where the hot sun acts injuriously on a bare surface. The roots of the young clover being protected from hard frosts and sudden changes, by the manure, it shoots forward with the earliest warmth of spring, and smothers all weeds.

When weeds mature their seeds, they draw upon the fertility of the land equal to most crops. Clover gives a crop equal to any other, and is all returned to the land in droppings of the stock while grazing upon it. As proof of its profit, for three years I never fed my working horse but once a day on grain or fodder, from the middle of May till the

clover fails. They are turned on the clover field after the day's work is over, and taken up in the morning in good condition for service. I have never lost one by this management; in fact, they improve from the time they are thus treated, and work better.

After the clover has been on the land for two summers, during which period it has dropped three crops of leaves stocks, and hereby greatly improved the land, either turn it under as before in September or October, for wheat, or later in the fall for corn the ensuing year. In former case you will find your land as thickly set as before with volunteer clover, which ought to remain as a pasture for the summer; after the second crop of wheat comes off. If corn instead of wheat, be grown, sow peas broadcast among the corn at the last plowing, soaking the seed and rolling them in plaster as before. After the corn crop, do not suffer the land to "lie out." No error can be more opposed to good farming, than that which assumes that land is improved by "lying out" and permitting a crop of weeds to mature upon it. If we had duly reflected, this error would long since have been apparent, in the continued quantity of thousands, of acres lying waste around us, *not a whit improved by "lying out."* After the soil has once been brought up by peas, subsoiling, or deep plowing and clover—all within reach of the farmer even in the interior—it will not again relapse, unless the former barbarous and senseless practice of exhaustion and negligence be again adopted.

If lime can be had, even at a cost of 20 cents a bushel, I would in all cases spread it on the land, after the first crop of peas had been turned under, to the amount of fifteen or twenty bushel per acre. This quantity will greatly benefit the land, and enable the owner shortly to repeat the application of a like quantity.—*The Southern Agriculturist.*

CRANBERRIES ON DRY UPLAND.—There are several gentlemen of our acquaintance who have been quite successful in cultivating the cranberry on ordinary upland without resorting to irrigation. The most successful of these growers are located on the Long Island plains, where the soil is a gravelly loam.—We have never had much faith in upland cranberry culture, but must confess that very excellent results have been obtained in the locality named. In a recent visit to Brentwood, L. I., we learned that Mr. E. F. Richardson's cranberry plantation gave promise of an excellent crop as usual, although no rain had fallen for several weeks. It is quite probable that there are many other localities where cranberries might be cultivated with profit upon ordinary farming land. The plants can be purchased at a mere nominal price, and the experiment is worth trying on a small scale at least.—*Hearth and Home.*

A Short Theory of Ice Making.

In the same manner as it takes 1000 units of heat to convert water into steam, under the atmospheric pressure, it takes 142 units of heat to convert ice into water. In other words, to convert one pound of ice at 32° into water at 32°, requires as much heat as to raise the temperature of one pound of water from 32° to 174°. This is easily verified by experiment. If we mix one pound of water of 174° with one pound of water of 32°, the result will be two pounds of water of the mean temperature 103°; but mixing one pound of water of 174° with one pound of ice of 32° will give us, after all the ice is melted, two pounds of water of 32°. Therefore, 142° have disappeared or become latent in the conversion of ice into water. Or again, mixing one pound of water of 212° with one pound of ice of 32°, we shall obtain two pounds of water of 51°; the ice gains only 19°, the boiling water loses 161°; and then, again, 142 units of heat have disappeared in the water.

Also in this case the heat may be got out again in freezing the water. Suppose we take two pounds of water, one pound of 174° and the other of 32°, and expose them to an artificial cold, each in a separate ice-cream-freezer, with the same quantities of snow and salt. It will be found that the same circumstances which will cool the water of 174° to 32°, will freeze all the water of 32° into solid ice of 32°. Both, therefore, have given up the same quantity of heat, 142 units, to the surrounding cooling mixture.—*Manufacturer and Builder.*

Making Fertile a Clay Soil.

Many of our farmers are not troubled with the stiff clay soil that is often difficult to make productive, and so cloddy and unmanageable in spring and summer; but others possess this soil, and will no doubt profit by our remarks: Fall plowing, leaving the ground as rough as possible when done, ready to go through; in winter when frozen up solid haul on all the manure and litter you have, scattering it pretty evenly over the surface. In the spring you will find that the frost has been a great pulverizer and that the great adhesiveness of your impervious clay has passed away. The manure and roughness you have applied will, in a great measure, tend to keep the soil loose and productive. If it is intended for corn it will need plowing again in spring, if for any small grain, only harrow down thoroughly after the grain is sown. Frost as an agent to fertilize and destroy the solidity of clay soil, is too little understood by our cultivators.—*Rural World.*

FISTULA IN HORSES.—Make a free opening in the lowest part of the sac, and inject it daily with a lotion containing two drams of chloride of zinc to a pint of soft water,

MONEY VALUE OF FERTILIZERS.

I notice that a writer in the *Tribune* estimates the value of bone meal* as follows :

5 lbs. Ammonis in 100 lbs. of Meal,	20 cts. a lb.\$1.00
14 lbs. Phos. Acid " " "	20 " 2.80
17 lbs. Bone Phos " " "	2 " 34
7 lbs. Carb. Acid " " "	2 " 14

Total.....\$4.28

Now I suppose the unbroken bones to be as rich or richer in the above named elements of fertility as the bone meal. And I understand that the ashes of bones are quite soluble—readily yielding up their elements to growing plants, but that bones lose their ammonia and carbonic acid on being burned. If, however, they lose nothing else—i. e., if the ashes of 100 pounds of bones contain 14 pounds of phosphoric acid, worth \$2.80, we can well afford to purchase bones at the prices here, and burn them for that alone. Please inform me about this. Is the foregoing a fair valuation of the elements of bones? And which of their elements are the residue after burning? (A.)

No. 1 Peruvian Guano costs here six cts. a pound; what therefore ought a two-horse load of stable manure that has to be hauled a mile to be worth? (B.)

What is the average money value of unleached oak wood ashes for manure? (C.) Would such ashes be a substitute for lime where lime would be a useful application to land? And if so, how much of the ashes would be the equivalent of 100 bushels of lime? (D.)

S. J. MATTHEWS.

Monticello, Ark., March 22.

The inquiries contained in the preceding communication were submitted to Joseph Harris, of Rochester, one of the best and most practical agricultural chemists in the country. He has kindly favored us with the annexed statements which furnish a full answer to the inquiries, and contain important suggestions. Mr. Harris, in a private letter, justly observes—"There are no questions more difficult in the whole range of agricultural chemistry—and in addition to this we have to consider the variation in the composition of barn-yard manure, its cost of drawing, spreading, &c. In placing manure at \$5 per ton, I take it for granted that it is well rotted, and intimately mixed with the soil, so as to be readily available. This latter idea (the importance of thorough intermixture with the soil) I first received from you." To these remarks we may add that the value of manure will obviously vary with the market price of the products of the soil, other things being equal.

Remarks by Mr. Harris.

(A) The fertilizing value of nitrogen and phos-

* The "bone meal" referred to, we suppose to consist of finely ground bones—not burnt bones, as the writer seems to suppose.

phoric acid depends very much on its condition.—Nitrogen in the form of nitric acid or ammonia, or in compounds such as urea, which readily decompose and form ammonia, is worth (at the present price of Peruvian Guano) 20 cents per pound. But when nitrogen exists in substances that decompose slowly, it is, of course, not as valuable. Hair, hide, horn, wool, &c., contain more nitrogen than the best Peruvian Guano, but no farmer could afford to pay as much per ton for them, because it takes a long time for them to decompose. And so it is with bones. We would rather pay 20 cents per pound for nitrogen in dried blood, urea or Peruvian Guano, than 10 cents in coarse bone dust.

And the same remarks will apply to phosphoric acid. Soluble phosphoric acid is worth 15 cents per pound, while that which is locked up in insoluble combinations is not worth more than 5 cents per pound. Pure bone dust contains per cwt. :

4 lbs. Nitrogen, worth say 10c. per lb.\$0.40
22 lbs. Phosphoric Acid, at 5c. 1.10

Total value per 100 lbs.\$1.50

This is all there is of material value in the bones. They are worth more or less than the above estimate, according to their fineness and consequent availability. If ground very fine, we should estimate them as follows :

4 lbs. Nitrogen, at 15c.\$0.60
22 lbs. Phosphoric Acid, at 7c. 1.54

\$2.14

The ashes of 100 pounds of bones would contain say 22 pounds of phosphoric acid, worth 5 cents per pound, or \$1.10. If ground up fine after burning, they would be worth \$1.54.

(B.) We can hardly give even an approximate answer to this question. It depends very much on the composition of the manure, the amount in the load and the cost of drawing. We shall perhaps not be far wrong in estimating a ton of good well rotted manure, on the land, as compared with good Peruvian Guano at the above price, at five dollars.

(C.) According to the tables given by Prof. S. W. Johnson in "How Crops Grow," the ashes from oak body-wood contain in 100 pounds :

Potash.....	10 0 lbs.	worth say, \$0.50
Soda.....	3.6 "	" "
Magnesia.....	4.8 "	" "
Lime.....	73.5 "	" "
Phosphoric Acid.....	5.5 "	" 37
Sulphuric Acid.....	1.4 "	" "
Silica.....	1.1 "	" 1
Chlorine.....	0.2 "	" "

Total value of 100 lbs. of oak ashes.....\$1.00

Of course it will be understood that these figures refer to ashes absolutely dry.

(D.) The lime in ashes is usually a carbonate of lime, and would not act as powerfully in decomposing the organic matter in the soil as quick lime, but it is equally valuable, or nearly so, in furnishing lime for the plants.—Country Gentleman,

LEACHED AND UNLEACHED ASHES.

On this subject, J. A. Whitney writes: The economy to the farmer of using leached ashes is evident, even were it not probable that the leached are really the best. The unleached ashes obtain a large quantity of soluble matter. Spread on your land, this matter is washed out by the first rain, perhaps acts immediately and rapidly, or is washed off, or soaks deep into the soil. Then, too, he loses for home uses his potash, and has to buy soap or lye for making it. The unleached ashes, if allowed to stand exposed to air and light under cover for six months or longer, absorb large quantities of nitrogen and oxygen from the atmosphere, connecting the silicate and sulphate of potassa into nitrate, thus greatly increasing its value as a fertilizer. Occasional sprinkling with water, and turning over, so as to expose every particle to the air assists this change. In leaching ashes the addition of a peck or two of unslacked lime to every two or three bushels of leached residuum quickens the nitrifying process, and converts the lye into a caustic hydrate, hence saving time and trouble in the future soap-making. Years ago Long Island farmers obtained large supplies of leached ashes from the soap-makers of New York and Brooklyn, but the introduction of soda and cheap potash from Canada has caused the soap-makers to cease the use of ashes.

As nitrogen rates highest in the valuation of manures, its substitution for the other combinations of the insoluble potassa plainly increases the value of the leached ashes as a manure. There is another point in this use of leached ashes, when in combination with unslacked lime. If the soil has any aluminous matter in it, nitrogen is rapidly absorbed and ammonia formed by the action and reaction of the caustic lime, the potassa and the alum generated or formed from the aluminous earth.

WHAT SOILS TO USE ASHES ON.

It seems to be agreed by farmers who have investigated the matter that ashes do best on light soils, and some contend that they are actually injurious on moist and compact clays. The same authorities admit their value on the opposite character of soils. One farmer says:—"I sowed 100 bushels of ashes mixed, leached and unleached, on dry loam alluvion, and my hay crop was increased one-half." Another states that he applied the leached, which he had allowed to stand twelve months, to his corn crop on similar land, and found it greatly increased. One farmer of our acquaintance, clearing some new land, saved the ashes and applied them to his sweet potato crop, and raised over 1000 bushels to the acre. It is a safe rule for any farmer having land that he knows is deficient in potash to apply wood ashes if he can get them, if not, the best fertilizer

which contains potash. The valuable qualities of the Squankum and other green sands of New Jersey are due in a great measure to the quantity of this alkali which they contain. The only question with him may be

HOW TO APPLY THE ASHES.

On this point the experience of farmers differs greatly; some prefer broadcasting, others sowing in the hill. For wheat, of course, broadcasting, and we think that this system is in all cases really the best, as though perhaps not bringing such immediate results, it undoubtedly benefits the whole mass of the soil and is more permanent. Many contend that the ashes should be composted. A compost we have seen and which we can recommend is: Ashes, 25 bushels; plaster 10 bushels; lime 10 bushels; animal manure, 40 to 50 bushels. Another is 1 bushel of plaster and 5 of ashes mixed, leached and unleached. We are of the opinion that whenever applied, unleached ashes should be mixed with ground plaster. This has a tendency to correct the great solubility of the potash, and acting on each other produce new, slower acting, and more valuable materials. Wood ashes composted with swamp muck correct its acidity and is itself benefitted; hence, on loose, boggy soils we suppose its action beneficial, yet as such soils seldom need fertilizing but merely warming, the cheaper lime will answer for them. A compost made of wood ashes and cotton-seed cake would be a valuable manure, and a mixture of fifteen bushels of ashes and fifteen of ground bone would be an excellent union. An English writer recommends ashes moistened with train oil, but cotton-seed cake or fish cake would be as cheap and better.—*Working Farmer.*

MIXING DIFFERENT KINDS OF GRASS SEEDS.—X. A. Willard, in a recent address made the following statement with regard to mingling different kinds of seeds, when land is to be stocked down:

"Sweet-scented vernal grass, flowering in April or May, one pound; Meadow Fescue, flowering in May or June, two pounds; Meadow Foxtail, flowering in May and June, two pounds; Orchard grass, flowering in May and June, six pounds; June grass, flowering in May and June, four pounds; Italian rye, flowering in June, four pounds; Perennial clover, flowering in June, three pounds; Timothy, flowering in June and July, three pounds; Red-top, flowering June and July, two pounds; Rough-stalked meadow, flowering June and July, two pounds; White clover, flowering May to September, five pounds; making in all 40 pounds.

"Blue grass, three pounds, and Alsike clover, three pounds. Red clover makes bad butter, inasmuch as it decomposes rapidly, giving out offensive odors."

DISEASES OF WHEAT.

Wheat is subject to more diseases than other grains, and, in some seasons, especially in wet ones, heavier losses are sustained from those diseases, than are felt in the culture of any other culmiferous crop with which we are acquainted. Wheat may suffer from the attack of insects at the root; from blight, which primarily affects the leaf or straw, and ultimately deprives the grain of sufficient nourishment; from mildew on the ear, which operates thereon with the force of an apoplectic stroke; and from gum of different shades, which lodges on the chaff or cups in which the grain is deposited.

BLIGHT originates from moist or foggy weather, and from hoar-frost, the effects of which, when expelled by a hot sun, are first discernible on the straw and afterwards on the ear, in a greater or less degree, according to local circumstances. Let a field be examined in a day or two after such weather, and a careful observer will soon be satisfied, that the fibres and leaves of the plants are contracted and enfeebled, in consequence of what may be called a stoppage of perspiration. This disorder may take place earlier or later, but is most fatal when it appears at the time the grain is forming in the ear. It may appear at an earlier stage; though the productive powers of the plant will thereby be lessened, yet, if circumstances are afterwards favorable, the quality of the grain produced may not be much impaired; or it may appear after the grain is fully formed, and then very little damage will be sustained, except by the straw.

MILDEW may be ranked as a disease which affects the ear, and is brought on by causes somewhat similar to those which occasion blight, though at a more advanced period of the season. If this disorder comes on immediately after the first appearance of the ear, the straw will also be affected; but if the grain is nearly or fully formed, then injury on the straw is not much discernible. We have seen a crop which carried wheat that was mildewed, where the straw was perfectly fresh, though, indeed, this rarely happens. A severe mildew, however, effectually prevents both corn and straw from making any further progress, the whole plant apparently going backward every day, till existence in a manner ceases altogether. Something akin to mildew is the gum or red oaker, which, in all warm moist seasons, attaches itself to the ear and often occasions considerable damage. All these different disorders are generally accompanied by insects; which animalculæ, by many people who take the effect for the cause, are considered, though without the least foundation, as the authors of the mischief that follows. Their appearance, however, may justly be attributed to the diseased state of the plant; for wherever putrefaction takes place, either in animal or vegetable substances, the presence of these insects will never be wanting.

RUST, another disorder which affects wheat, and by several people denominated the real rust, is brought on by excessive heats, which occasion the plants to suffer from a privation of nourishment, and become sickly and feeble. In this atrophical state, a kind of dust gathers on the stalk and leaves, which increases with the disease, till the plant is in a great measure worn out and exhausted. The only remedy in this case, and it is one that cannot easily be administered by the hand of man, is a plentiful supply of moisture, by which, if it is received before consumption is too far advanced, the crop is bene-

fitted in a degree proportional to the extent of nourishment received, and the stage at which the disease has arrived.

IMPROPRIETY OF SOWING MILDEWED WHEAT.—Some people have recommended the sowing of blighted and mildewed wheat, because it will vegetate; though certainly the recommendation, if carried into practice, would be attended with imminent danger to those who attempted it. That light or defective wheat will vegetate and produce a plant, we are not disposed to contradict; but that it will vegetate as briskly, or put out a stem of equal strength, and capable of withstanding the severe winter blasts, as those produced from sound seed, we must be excused for not believing. Let it only be considered, that a plant of young wheat, unless when very early sown, lives three or four months, in a great measure, upon the nourishment which it derives from the parent seed; and that such nourishment can, in no view of the subject, be so great when the parent is lean and emaciated, as when sound, healthy, and vigorous. Let it also be remembered, that a plant produced from the best and weightiest seed, must, in every case, under a parity of other circumstances, have a stronger constitution at the outset, which necessarily qualifies it to push on with a greater energy when the season of growth arrives. Indeed the economy of nature would be overturned, had any other results followed. A breeder of cattle or sheep would not act more foolishly, who trusted that a deformed diminutive bull or ram would produce him good stock, than the corn farmer does who uses unsound or imperfect seed.

TO REMOVE THE MILDEW ON WHEAT a solution of common salt in water, in the proportion of a pound to a gallon, is an excellent remedy. After sprinkling three or four days, the mildew will disappear, leaving only a discolouration on the straw where it was destroyed. The best and most expeditious way of applying the mixture is with a flat brush, such as is used by whitewashers. The operator having a pail of the mixture in one hand, with the others he dips the brush into it, and makes his regular casts as when sowing corn broad-cast; in this way he will readily get over ten acres in the day, and with an assistant a great deal more. About two hogsheads of the mixture will suffice for an acre. Wherever the mixture touches, the mildew immediately dies.

TO PREVENT MILDEW IN WHEAT dissolve 3 ounces and 2 drachms of sulphate of copper, coppers, or blue vitriol, in 3 gallons and 3 quarts, wine measure, of cold water, for every three bushels of grain that is to be prepared. Into another vessel capable of containing from 53 to 79 gallons, throw from 3 to 4 Winchester bushels of wheat, into which the prepared liquid is poured, until it rises 5 to 6 inches above the corn. Stir it thoroughly; and carefully remove all that swims on the surface. After it has remained half an hour in the preparation, throw the wheat into a basket that will allow the water to escape, but not the grain. It ought then to be immediately washed in rain, or pure water, which will prevent any risk of its injuring the germ, and afterwards the seed ought to be dried before it is sown. It may be preserved in this shape for months.

TO PREVENT THE SMUT IN WHEAT, liming the seed by immersion is recommended by a French writer, as the only preventive warranted by science and sanctioned by experience, and the following is given

as the method in which the process is best performed :

To destroy the germs of the blight in 4 1-2 bushels or 256 lbs. of corn, about 6 or 7 gallons of water must be used, as grain may be more or less dry, and from 35 to 42 ounces avoirdupois of quick lime, according as it may be more or less caustic, and according as the seed may have more or less of the blight. Boil part of the water, slake the lime with it; and then add the rest. When joined, the heat of the water should be such, that the hand can with difficulty bear it. Pour the lime water upon the corn placed in a tub, stirring it incessantly, first with a stick, and afterwards with a shovel. The liquid should, at first, cover the wheat, three or four finger's breadth; it will soon be absorbed by the grain. In this state let it remain covered over for 24 hours, but turn it over 5 or 6 times during the day. Such parts of the liquor as will drain off, may then be separated, when the corn, after standing a few hours, in order that it may run freely out of the hand, may be sown. If not intended to be used immediately, the limed wheat should be put in a heap, and moved once or twice a day till dry. Experience has proved that limed grain germinates sooner than unlimed; and as it carries with it moisture sufficient to develop the embryo, the seed will not suffer for want of rain; insects will not attack it, the acrid taste of the lime being offensive to them; and as every grain germinates, a less quantity is requisite. In fact, the grain being swelled, the sower filling his hand as usual, will, when he has sown 65 handfuls of limed corn, have, in reality, only used 52. As blighted grains preserve, for a long time, the power of germinating, the careful farmer, whose grain has been touched, should carefully sweep out the crevices in the walls and cracks in the floor of his barn, and take great pains to clean them thoroughly.

ANOTHER METHOD.—A tub is used that has a hole at bottom for a spigot and faucet, fixed in a wisp of straw, to prevent any small pieces of lime passing (as in brewing.) To 70 gallons of water, add a corn bushel of unslaked lime, stir it well till the whole is mixed, let it stand 30 hours, run it off into another tub as clear as possible (as practiced in beer); add 42 pounds of salt, which, with stirring, will soon dissolve; this is a proper pickle for brining and liming seed wheat without any abstacle, and greatly facilitates the drilling.

Steep the wheat in a broad bottomed basket, twenty-four inches diameter, and twenty inches deep, running in the grain gradually in small quantities, from 10 to 12 gallons: stirring the same. What floats, skim off, and do not sow; then draw up the basket, to drain the pickle, for a few minutes; this may be performed in half an hour, and when sufficiently pickled, proceed as before. The wheat will be fit for sowing in 24 hours, if required; but for drilling, two hours pickled will be best; and prepared four or five days before.

MR. HENDERSON'S METHOD OF PREVENTING SMUT IN WHEAT.—Take of best soft green soap made from fish-oil, 1 pound, and of scalding water, 4 gallons. Put the soap into a glazed vessel, with a small portion of the water; continue stirring it, and add the water as it dissolves, till the whole is a perfect ley. It should be used about 90 deg. of Fahrenheit's thermometer, or newmilk heat. Put the wheat into a tub, and pour on it a quantity of the liquor sufficient to cover it completely, and throw a blanket over it to preserve the heat. Stir it every ten min-

utes, and take off the scum. When it has remained in this manner for an hour, drain the liquor from the wheat through a sieve, or let the tub be furnished with a drain bottom like a brewing vat. Let the liquor which was drawn off stand a few minutes to subside, and then pour it off the sediment. Repeat the operation till the whole quantity is steeped; only observe to add, each time, as much hot ley as was observed by the former steeping. Dry the wheat with quick lime, and sow as soon as convenient. It will keep ten days after steeping but should be spread thin on a dry floor.

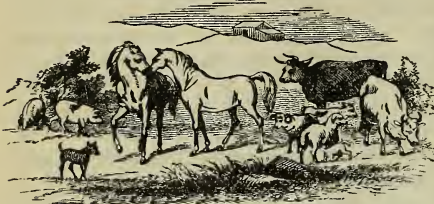
Three pounds of soap, and 12 gallons of water, will steep half a boll of wheat. If a tub with a drain-bottom is used, such as a hogshead, with a spigot to draw off the ley, 4 ounces of soap, and 1 gallon of water scalding hot, will preserve a stock of warm ley sufficient for any quantity of wheat; and allowing 5 minutes for draining, five bolls may be done in 11 hours. The operation should be performed in a clean place, at a distance from barns and granaries, the roofs of which may be observed hanging full of smut. The refuse of smutted wheat should be buried deep in the earth, and not thrown to the dung-hill, from which it would be conveyed to the field.—*The Milling Journal.*

NO MIDDLE FURROW.—*How to plow a field so as not to have any middle furrow:* 1st. Measure across one end, and in exactly half way across set a stake tall enough to be seen across the field from the other end. Then proceed to the other end and there find the centre by careful measurement, and here with stake in hand proceed toward the first stake set, until the distance from the end shall equal half the diameter as just measured, and there set the stake. Then go to the first stake set and carry it toward the last one a distance equal to one-half the diameter of that end of the field; there set it. Should one end be wider than the other, the wide end should have two stakes put in such position that each of the three will be equidistant from the outside. Then back-furrow from each corner of the field directly to the nearest stake. The commence and "gee" around from one stake to another.

The ridge formed by the back furrows, as above mentioned, can be turned on at the corners and leaves no baulks and saves driving. There may be one short middle furrow to "haw" out in the centre, but that can be avoided. This method saves making such ridges as are often seen next the face.—*PETER WYKOFF, in Germantown Telegraph.*

The Gardeners' Monthly says that some persons think that as the hemlock is a large forest tree, it cannot be kept down as a hedge plant; but Summer pruning will keep the strongest tree in a dwarf condition for a number of years. The pruning has to be done just after the young growth pushes out, which generally is about the end of May. It is very important the hedge should be cut with sloping sides, so that every part of the surface should have the full benefit of the light. A hedge with upright sides or a square top, will not keep thick at the bottom long.

Live Stock Register.



GENERAL TREATMENT OF THE HORSE.

Much depends upon the food, exercise and care bestowed upon the horse to prepare him to stand the severe ordeal of hard service. The feet and legs are the most sensitive organs, and will decay under severe labor long before the body has worn out. Shoeing, bathing, stuffing, cleansing and proper exercise are the agents for preserving the feet sound and the legs firm to support the body under exertions for the longest period. Colts grown on extreme wet lands have coarse bones, flat feet and low heels. Those grown on dry lands have fine bone, hollow feet and high heels. One is subject to weakness from construction, the other to tender feet from contraction. Turning out into wet pastures has been found by experience to cool the feet, restore circulation and expand the hoof. Stable floors or dry, sunburnt pastures, contract the hoof. The constant moisture in the wet pasture is the sole cause of increasing the growth and expansion of the hoof.

Fomentations and bandages will answer the same purpose in the box stall. Bandages consist of strips of flannel or linen cloth five or six inches wide wet in water, and bound round the leg from the knee or gambrel joint to the hoof. The feet and legs fever up and stock in the reaction from severe exertions to absolute rest. The wet cloths will restore the legs from inflamed, gouty puffs, to the natural, sound, cool, healthy state, and can be removed when dry. These appendages are excellent antidotes to swelled legs or exhausted nerves, and supersede rest, and turning out to grass to preserve condition. Stuffing the feet is the last resort to prevent contraction of the hoof. The stuffing most in use is composed of a mixture of clay and cowdung. This composition preserves moisture, and prevents the foot from crisping up into a hard, unyielding substance. It may be used in dry weather to advantage upon all horses, at least once or twice a week, and oftener, upon those subject to contracted hoofs.

The body is brought into condition to perform

service by day by exercise and gentle sweats. All that the carcass can be lightened, without diminishing strength, is a positive gain. The food and manner of feeding has an influence upon the action. Bulky food distends the stomach, clogs the wind, and loads down the body. It is not the bulk of woody fibre, but nutritious substance that gives vigor to the body and strength to the limbs. Many disorders arise from overloading the stomach with half-cured, bulky food. The dust and smoke from decayed vegetable matter is deleterious to the health of all animals. It is well cured, pure, unadulterated food that contains the original elements that feed bone and muscle. Wholesome food, pure air, and cleanliness, are the guardians of health in the equine family.

Superfluous flesh is in reality waste material, of no earthly use to man or beast for any practical purpose. It may be removed by sweating and exercise. It incommodes the free action of the vital forces, prevents the full expansion of the muscles, and endangers the legs. The internal fat is a positive drag in fast road work. It must be drawn out by external sweats with appropriate exercise in order to realize the benefit of good health and great activity. Whenever condition is up to the standard of ten miles an hour without distress, or any desired rate of speed, the system of hardening the muscles and clearing the wind may be dispensed with. It has filled its mission and produced the intended effect. Too much training will exhaust the physical powers, weaken the system, and impair condition. Labor, judiciously apportioned out, agreeable to the laws of health, will keep up condition to its acquired state of endurance.

Improvement in speed and bottom is subject to be modified by blood and breeding. The spirits may be broken down before the body wears out. The temper and constitution must be understood by the trainer to warrant success in the undertaking. The forced construction of endurance has defeated the lasting speed of many promising colts. The ambition to force the pace has disheartened the pupil and destroyed his future prospects. It is a rule founded upon common sense, that when the horse is performing well to let well enough alone. The driver who rushes his steed from his feet looses the force of perfect mechanical action, and often impedes his progress, and wastes his powers of endurance. He is like the man who was well, wanted to be better, and took nostrums to make him sick. The amateur anxious to realize from an early market cannot wait to develop speed agreeably to the laws of Nature. It takes five years to rear the horse. Why should it not take as long to develop his speed as to mature his body?

There is a place for all horses; but some have

been sadly misplaced. Speed is not necessary to plow, nor is the cart horse at home in the road wagon. Action, form and weight must be adapted to the labor required. The breeder must note the habits of the people and the customs of the country, to meet the exigency of the times and supply the public demand. If the public are ambitious for speed, it will be his interest to gratify their propensity. The public favorites will find a ready market at remunerating prices. Action must be cultivated from its native source to meet the demand. It would be useless to attempt to produce speed from a source where it never did exist. The means could not be adapted to the end. It would be at variance with a known fact and opposed to a well-established theory. You might as well seek for rapid action out of a slow breed. Speed is derived from a faculty bred in to generations, which comes out through individual inheritance. When it has become the leading character of the breed it is sure to follow down to their successors.

Breeding stock is a commendable enterprise worth of public patronage or private munificence. It requires genius to conceive and capacity to execute the designs of the breeder, founded upon observation and matured by experience. To attain a high rank in the profession requires knowledge and experience. The successful breeders and accomplished trainers who have brought out such prodigies as Herzog and Fanny Ludlow, Lexington and Lecomte, are worthy of commendation. It shows that the genius and ability to improve the high mettled racer has not lost its hold upon the American people. Many renowned horses appear annually in the majesty of champions, to attest the fidelity and public spirit of individuals, and give them distinction as breeders. The rural producer is the source of the wealth of the State. Their labors conduce to individual gain and public protection. The horse fights and plows for the common defence and general welfare. He is the instrument of war in evil report, and the servant of peace when the sword has been converted into the plow-share. It is not only the war charger but the wonderful trotter that has raised to the breeder and trainer an imperishable altar of fame. Dexter with 2.17½, Lady Thorne with a record of 2.18½, and Goldsmith Maid with a better staying record, have illustrated their breeding by invincible conquests, which reflect credit upon their breeders and distinction upon the turf.

The man who makes two spears of grass grow where but one grew before, is called a benefactor of his country. The breeder who improves the horse in strength and bottom to perform two miles where but one was performed before, augments productive industry and ameliorates the condition of his race. He deserves the everlasting gratitude of his country, because his improvements descend to posterity.—*Diomed, in Turf, Field and Farm.*

ALDERNEY CATTLE.

As this strain of blood is at present the fashionable one, and almost every one who owns or rents a country place seems desirous of procuring one or two animals of this breed, and when so many half-bloods are sold by unscrupulous persons as thorough-bred, we give below the numerous points which are looked upon by judges of these cattle as constituting a superior animal, premising by saying however, that although the fashionable color at the present time is squirrel gray, the parti-colored are equally as pure, and may, in a year usurp the place now taken by the grays, by the vagaries of that insincere nymph, Fashion. There are thirty-two points, as follow :

Points of Bulls.—Head fine and tapering, forehead broad, cheek small, clean throat, muzzle firm and encircled by rim of light color, nostrils high and open, horns smooth, crumpled, not too thick at the base, tapering in shape, tipped with black, ears small and thin and of a deep orange color inside, eyes full and lively and dark in color; neck arched, powerful but not coarse or heavy; much of this, however, depends on the size and age of the bull: chest broad and deep; barrel same shape as chest, but also hooped, being well ribbed home and having but little space between the last rib and the hip. Back straight from the withers to the top of the hip, straight from the top of the hip to the setting on of the tail: and the tail at right angles with the back. The tail should be fine and hanging down to the hocks. Hide thin and movable but not loose, of good rich color and covered with fine soft hair. Forelegs short, straight and fine. Forearm powerful, swelling and full about the knee. The hindquarter should be from the hock to the point of the rump and well filled up. Hind legs should be short, straight below the hock, bones rather fine, squarely placed, not too close together when viewed from behind, and must not cross when the animal is walking. Hoofs small and generally dark in color. We have here twenty-eight of the points; the last three must be growth, general appearance and condition, all of which will be readily perceived when several animals are viewed together. The points for judging of cows and heifers are very much the same. The udders should be full in form and well in line with the belly, as also run well up behind. The teats should be large, squarely placed, the hind ones wide apart. Milk veins should be well developed and very prominent.

We have given here directions so that almost any amateur can select a good animal, and will conclude by saying that we fancy the parti-colored more than the grays, giving our preference to a four-

year-old bull (although having both colors) of ours, which we can best describe as follows :

Black neck ; light cream-colored circle around the muzzle ; from the ending of the black on neck we have a patch of fawn-color, blending down the sides with cream-color, and ending under the belly in pure white. Just above the hips we have another patch of black, with dark fawn-color from the root of the tail, which is very fine, white to the beginning of the long hair, which is black as jet. His legs are white to the ankle, where the dark hair again comes in and runs to the hoofs, which are black as jet. We intend to send this bull to the New Jersey State Fair this Autumn, where we think he will compare favorably with any of the more fashionable color.—*Turf, Field and Farm.*

Salt for Domestic Animals.

The quantity per head, and the proper way of administering salt to our domestic animals, and also the question whether they should have salt at all, we observe is still being discussed, and going the rounds of the agricultural papers. Practical experience has long since settled these questions, and we think no stock or other farmer, who has ever tried it, will resort to any but the common-sense plan, of having a lump of rock-salt accessible to stock at all times. It should be in the horse and cow trough, in the sheep and barn-yard, and in the field. They will then take as much as they want, and nature prompts no more. Taken in this way, it will promote appetite, good health, and thrift, and no diarrhoea or other disease will result, as they often do when given at specified times and in large quantities.

Salt is not a food but a condiment. The human system requires some salt in food ; but we imagine if a tablespoonful or other quantity of salt was put before a man only at certain times, and perhaps when his appetite did not prompt the use of it, it would do no good. We think the same rule applies to our domestic animals ; but by allowing them free access to it, they will never take more than enough ; and what they do take will promote thrift, and indirectly ward off diseases to which the flesh is heir.

Rock-salt can be procured in large lumps weighing 10 to 20, 30, 40 lbs., each, at about two and a half cents per pound.—*New England Homestead.*

Carboline is said to destroy all insects, and in a weak solution with water, will prevent flies from teasing horses, if they are washed with it, care being taken not to get it into the eyes. Pennyroyal steeped in water, used as a wash, will produce a similar effect.

USEFUL RECIPES.

CHEST FOUNDER IN HORSES.—Is produced by violent exercise on a full stomach, and drinking large quantities of cold water—by the use of mouldy corn, oats, &c., or by eating large quantities of green food while performing hard labor. The seat of the disease is in the lungs. The heart and liver are also considerably enlarged, inasmuch that there is not room for them to perform their office with ease. The liver, lungs, diaphragm and surrounding parts are all covered with large brown spots, and are much inflamed. Symptoms.—A horse that is chest (body foundered) foundered, will straddle with his fore legs showing an unwillingness to bring his feet together ; and if they are placed near each other he will not permit them to remain so for a minute ; indeed they are frequently eighteen inches apart, which is caused by a fullness and continual uneasiness about the chest, the cavity being too small to contain the lungs, &c., in their enlarged situation, with ease. The hind legs are free from the palsied appearance of those before, and it is not difficult to distinguish it from a common founder, as it is wanting in all its symptoms, except the stiff and numbed appearance of the legs. Large bleeding should be resorted to, and a tablespoonful of the Macassar horse powders, mixed with a quarter of an ounce of Barbadoes aloes, given internally will generally effect a cure.

CHICKEN CHOLERA.—Feed your poultry raw onions chopped fine, mixed with other food, about twice a week. It is better than a dozen cures for chicken cholera.

DIARRHŒA IN FOWLS.—Pulverized chalk administered with soft feed will cure diarrhœa. This disorder is caused by want of variety in the food, or by too much green food.

CUTANEOUS ERUPTIONS IN HORSES.—For the cutaneous disorder apply the following liniment on the parts which the horse rubs or which are scabby and bare. Linseed oil one pint, oil of tar four ounces, sulphur four ounces.

WORMS IN HORSES.—If a drachm of calomel is given daily for six days in bran, and then a dose of physic given on the seventh day, it will remove the worms from the intestines.

TO REMOVE WARTS.—I have found the following recipe, although slower than the ordinary way, is equally as efficient, and has the advantage of causing no pain :

Dissolve three tea-spoonful of blue vitriol in a pint of water ; keep well corked ; and apply with a feather, or small camel's hair brush, twice a day.

BOTS IN HORSES.—For bots, drench the animal with half a pint of thin tar, which kills them instantly.

One-half pint of whiskey, one-half pint of gun-powder, one-half pint of molasses, and one-half pint soft soap will cure the worst case of bots.

LAMENESS.—For lameness that results from a sprain, try the effect of rest and wet bandages until it is no longer painful on pressure, then rub it daily with a mixture of equal parts of mercurial and iodine ointments. When this causes local soreness, suspend it till it has passed off, when it may be re-applied.

KNEE SPRUNG HORSES.—Being usually due to the same or similar causes with knuckling at the fetlock, this can often be remedied in the same way. If the toe is slightly raised and the heel slightly lowered at each shoeing, care being taken that gentle exercise but no heavy work be given in the interval, the knee may oftentimes be restored to a tolerably healthy condition ; but if the change is made too sudden and extensive, spraining and further injury inevitably result.—*From American Stock Journal.*

HOLBROOK'S PATENT SWIVEL PLOW.



The above is a representation of Holbrooks' Swivel Plow, an account of which appeared in the *Country Gentleman* of May 26th, by Judge French, who had operated it. The following we extract from F. F. Holbrook & Co's circular, Boston, Mass.:

"A Swivel Plow that will turn level land well has long been wanted, and since the introduction of the mowing machine, the horse rake, and the hay tedder, it has been found still more important to avoid the dead furrows and ridges left by the common or landside plows, and lay the fields down level.

"To meet this want, we have perfected a new series of Swivel Plows which turn level land as well, and pulverize it much better than the best level land plows, work equally well in sod or stubble ground, are perfectly adapted to the plowing of hill-sides, and indeed will turn furrows up hill if required.

"The mould-boards of these plows being of peculiar convex form throughout, will not clog, and they crack, disintegrate and pulverize the soil to a remarkable degree, converting the inverted sod into a fine velvety elasticity which has never been effected by any other plow. The land is so thoroughly pulverized to the full depth of the furrow by these plows, that not more than one-third the usual harrowing is required to produce a fine mellow tilth, the labor of the other after cultivation is much lessened, and the crops are benefitted.

"Our new plow standard supports and strengthens the handles and beam, holding the beam firmly in true line, and dispenses with all mortising and tenoning of beam and handles. The shoe or bottom of the standard, when worn out, can be cheaply renewed, when the common swivel plows would require an entire new standard. There are other advantages in using these Swivel Plows, viz:

"1. The work of the team is equalized, as in going the off ox or horse travels in the furrow, and in returning the near one.

"2. The team always turns on the unplowed land, and in turning reuses the mould-board, requiring no lifting and but little effort by the plowman.

"3. Considerable time is saved in coming about, no passing across the ends of the land being required.

"4. The head lands being plowed last, there is no treading down and compacting of the narrow-slices.

"5. The plowed land lying together, the work of manuring, harrowing, and seeding can go on up to the plow."

The prices of these plows range from \$10 to \$28.

STATE FAIRS FOR 1870.

We give the following list of the times and places of holding State Fairs in the Autumn of 1870.

Illinois.....	Decatur.....	Sept. 26 to Oct. 1
Iowa.....	Keokuk.....	Sept. 13 16
Kansas.....	Port Scott.....	Sept. 27 30
Minnesota.....	Winona.....	Sept. 20 23
Nebraska.....	Brownville.....	Sept. 20 23
New York.....	Utica.....	Sept. 27 30
Ohio.....	Springfield.....	Sept. 13 16
Ontario..... (Provin.).....	Toronto.....	Oct. 3-7
St. Louis Assoc'n.....	St. Louis.....	Oct. 3-7
Wisconsin.....	Milwaukee.....	Sept. 27 30
Kentucky.....	Henderson.....	Oct. 4-...
Maryland.....	Baltimore.....	Sept. 27-31
North Carolina.....	Raleigh.....	Oct.
Georgia.....	Atlanta.....	Oct. 19-26
Pennsylvania.....	Scranton.....	Sept. 27 30
Michigan.....	Jackson.....	Sept. 20 23
Central Michigan.....	Lansing.....	Sept. 14-16
Arkansas.....	Little Rock.....	Oct. 11-14
Vermont.....	Burlington.....	Sept. 6-9
Woolen Exposition.....	Cincinnati.....	Sept. 21 to Oct. 15
South Carolina.....	Columbia.....	Nov. 9 12
Virginia.....	Richmond.....	Nov. 1-4
California.....	Sacramento.....	Sept.
Maine.....	Augusta.....	Sept. 22-23
Washington Territory.....	Walla-Walla.....	Sept. 22 25
Indiana.....	Indianapolis.....	Oct. 3-7
Northern Ohio.....	Cleveland.....	Oct. 4 7
Texas.....	San Antonio.....	Oct. 5 8
Georgia.....	Atlanta.....	Oct. 19-26
Cotton States.....	Augusta.....	Oct. 25 29
New Hampshire.....	Manchester.....	Sept. 6 9
Inter-State.....	Pittsburgh.....	Sept. 12-16
Mississippi.....	Jackson.....	Oct. 10-15
American Institute.....	New York.....	Sept. 7 to Nov. 2

New Advertisements.

R. H. Allen & Co.....	Patent Potato Digger, Blanchard Churn, Grain Drill, Fertilizer and Broadcast Sower, &c.
B. M. Rhodes & Co.....	Superphosphate.
Wm. Crichton & Son* ..	Superphosphate of Lime.
Hoopes, Bro. & Thomas...	New Trade List.
E. Whitman & Sons.....	Coe's Superphosphate, Machinery and Seeds.
H. G. Eastman, LL.D.....	Eastman College.
Thos. J. Pullen.....	Peach Trees, &c.
S. C. Thompson & Co.....	Agents Wanted.
A. M. Purdy.....	Fruit Trees and Plants.
J. W. & M. Irwin.....	Chester Pigs, &c.
The Hall Husking Glove Company.....	Husking Gloves.
Wm. S. Little.....	Mount Vernon Pear.
John Saul.....	Saul's Nurseries.
C. A. Clegg & Co.....	Silver's Elastic Broom.
A. A. Newton & Co.....	Meat and Vegetable Choppers.
F. L. Sage.....	Vinegar.

THE MARYLAND FARMER

AT \$1.50 PER ANNUM,

PUBLISHED ON THE 1ST OF EACH MONTH,

BY

S. SANDS MILLS & CO.

No. 145 West Pratt Street,

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BALTIMORE.

S. SANDS MILLS, } PUBLISHERS AND PROPRIETORS.
E. WHITMAN, }

BALTIMORE, SEPTEMBER 1, 1870.

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1 " 12 ".....	70 00
1 " 6 ".....	40 00
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IMPORTATION OF HEREFORDS.

The Steamer F. W. Brune, landed in this city, August 19th, three head of young Herefords, imported by Hon. John Merryman, of Baltimore county. The cattle arrived in New York on Monday previous, on board the steamship Nevada, and will contribute materially at the approaching exhibition of the Maryland State Agricultural Association at Pimlico. The stock were bred John H. Arkwright, Esq., of Hampton Green, Leominster, England, and selected by Mr. Daniel Pierce, of Herefordshire, who accompanied them on the voyage. Instructions, had been given for their shipment via Southampton, per steamer direct to Baltimore, but the suspension of travel by the Baltimore and Bremen line necessarily compelled the change. The cattle were greatly admired by those who witnessed their landing, and will make a splendid addition to the already valuable herd at Hayfield.

THE MARYLAND JOCKEY CLUB.—The Inaugural meeting of this club will commence on Tuesday, 25th of October, at Baltimore, and continue four days. The officers of this club are rapidly perfecting all the necessary arrangements for this great meeting.

Good farmers read the advertisements, know what is going on, and frequently save money by it.

Sale of Imported Jersey Cattle.

The list of Jersey cattle which appeared in our July number, exported by Edward P. P. Fowler, of Jersey Island, and consigned to Messrs. Ricards, Lettwich & Co., of Baltimore, was sold on August 11th last, by Messrs. Trego & Kirkland, auctioneers. They consisted of seven cows and heifers, and a prize Jersey Bull. The sale was well attended, and the bidding spirited. The following were the prices brought: Sunshine, a two-year old heifer, sold for \$305, to D. C. Howell; Welcome, a four-year old cow, for \$285, to Wm. T. Walters, of Baltimore; Sweetbrier, a two-year old heifer, for \$320, to W. H. Perot, of Baltimore; Bijou, a two-year old heifer, for \$300, to R. J. Rieman, of Baltimore; Matchless, a two-year old heifer, for \$315, to L. S. Harden, of Louisville, Ky.; Princess, a four-year old cow, for \$320, to Wm. T. Walters. All the above are expected to calve within the next few weeks. The prize bull Rolla, 16 months old, was purchased by J. Savage Williams, for \$225.

Agricultural Congress.

In accordance with a call made by a number of leading agriculturists in the Southern States, whose circular we published in our August number, the President of the Maryland Agricultural Society, Hon. Wm. Devries, proposes to appoint delegates to represent Maryland in said Congress, which is to meet in Augusta, Georgia, on the 26th of October next. The object of the association is to take such action as to more successfully promote the general agricultural interests of the States South. All communications must be addressed to E. H. Gray, Esq., Secretary, Augusta, Ga.

COMPLIMENTARY TICKETS.—D. Wyatt Aiken, Secretary, kindly sends us a complimentary ticket, through the Executive Committee, to attend the Annual Fair of the South Carolina Agricultural and Mechanical Society, to be held at Columbia, S. C., on the 9th of November, to continue four days.

We are also indebted to John G. Reynolds, Secretary of the Illinois State Fair, for complimentary ticket to attend the Fair to be held at Decatur, commencing September 26th, to continue four days.

SUCCESSION OF PEACHES.—Edmund Morris, gives in Tilton's Journal, the following list of peaches to yield a succession for market, which will give a succession for more than two months: Hale's Early, Troth's Early, Early York, Crawford's Early, Reeve's Favorite, Oldmixon, Ward's Late, Fox's Seedling, Late Crawford, Delaware White, Freeman's White, and Smock's Yellow.

FALL FAIRS IN MARYLAND.**The Maryland State Fair.**

The Second Exhibition of this Society will be held on their Fair Grounds, at Pimlico, near Baltimore, to commence Tuesday, September 27th, and continue four days. The Executive Committee are earnestly at work perfecting the arrangements, and everything indicates a grand success. Wm. Devries, Esq., President of the Society, aided by the other officers, are indefatigable in their efforts to make this surpass all preceding exhibitions of this Society, even in the palmy days of old. The List of Premiums, and Rules and Regulations, and List of Officers, will be found in the July number of the **MARYLAND FARMER**.

Second Agricultural Fair at Cumberland.

The Second Annual Fair of the Agricultural and Mechanical Society of Alleghany County, Md., W. Virginia and Pennsylvania, will be held on their new Fair Grounds, near Cumberland, beginning October 4th, to continue four days. A large list of premiums is offered. The premium for the fastest trotting is \$300 for the winning horse, and \$150 for the second horse, and for running, \$300 for the winning horse, \$150 for the second, and \$50 for the third. Liberal premiums are also offered for Horses, Cows, Bulls, Sheep, Oxen, Poultry, Household Articles, &c. The premiums for Agricultural Implements and Machinery are not of a very fostering character, and strike us as not offering sufficient inducement to manufacturers to incur a heavy expense in making a display in that department—the Society offering simply *Diplomas* for all of these classes, save Steam Engines and Portable Saw Mills, for which \$10 is offered. There should be more discrimination in the awards—but this seems to be the ruling at all of our Fairs, but upon what principle of justice we are yet to learn.

The following are the officers for the present year: President—Hon. J. Philip Roman. Vice President—Geo. W. Washington. Secretary—Col. Will H. Lowdermilk. Corresp. Secretary—C. C. Shriver. Treasurer—George Henderson, Jr. Chief Marshal—Col. James M. Schley. Assist.—John M. Resley.

The Carroll County Agricultural Fair.

The Annual Fair of this Society will commence on the 4th of October next, and continue four days. The premium list has been issued, and on a liberal scale. Efforts are being made by the Committee to give satisfaction and ensure success. The grounds which are eligibly located near Westminster, are being put in a thorough condition, the stalls and pens whitewashed, and every facility offered for the exhibition of Stock, Farm Implements, Fancy arti-

cles, Fruits, &c. The last exhibition of this Society was a decided success, and with the experience gained the forthcoming Fair bids to eclipse it.

President of Society—Hon. John E. Smith. Secretary—William A. McKellip. Post office, Westminster, Md.

Montgomery County Agricultural Fair.

The 17th Annual Fair of the Montgomery Agricultural Society will be held on the grounds near Rockville, beginning Wednesday, September 14th, and continue three days. The Society presents a very attractive list of premiums for competition.—The owners of fine horses, Durham, Devon and Alderney Cattle, as well as Oxen, Sheep, Hogs, Poultry, &c., will find the premiums, as well as the pride of success, worthy of their active efforts. Manufacturers of Agricultural Implements and Machinery are also provided for. George Schley, Esq., of Hagerstown, has accepted the invitation of the Society, and will deliver the annual address.

President of the Society—Joseph H. Bradley.—Secretary—W. V. Bouie. Postoffice Rockville, Md.

Frederick County Agricultural Fair.

The next annual exhibition of this Society will be held on their beautiful grounds near Frederick city, commencing on the 11th of October next, to continue four days. A liberal list of premiums is offered. Judging from their past exhibitions we anticipate a highly creditable display in all its departments. The Fair grounds of this Society are admirably arranged for the exhibition of stock, agricultural implements, horticultural products, &c.

President of the Society—C. K. Thomas. Secretary—H. C. Koehler. Postoffice, Frederick, Md.

SPECIMEN OF GRASS.—A correspondent at Woodstock, Va., sends us a few heads of grass for name, and asks whether it would "suit our lands and climate." The specimen is a species of oat grass, of which there are nearly 100 varieties, ranging from Red Top and Creeping Bent to Oat and Rye Grass. As to its being adapted to his "lands and climate," we cannot positively assert, but judging from the specimen sent us we should think it could be successfully raised in his latitude. The "one farmer" who raised and is "well pleased with it," might answer the question.

Good farmers repair their tools and buildings at a proper time, and do not suffer a subsequent three-fold expenditure of time and money. They use their money judiciously, and they do not attend auction sales to purchase all kinds of trumpery because it is cheap.

FOR THE MARYLAND FARMER.
THE ORCHARD.

The apple is grown over a wide range of country, in a great variety of soils and climate, and is used for a great variety of purposes.

Much the larger portion of those grown in our country are of the winter varieties, which are used mainly for culinary purposes and as desserts.

Perhaps the next largest consumption of the apple is for the purpose of distillation into apple brandy and making cider, though large quantities of apples are used in making cider vinegar.

In some districts they are used quite extensively for making pork; in others for feeding milch cows and other stock. For all these, and for other purposes, at the average market value of the articles produced, the apple crop, properly cultivated under congenial circumstances, is more profitable than roots or cereals.

Apple culture is made more profitable in New York than in any other portion of our country known to the writer. The trees are there usually planted two poles apart each way, which gives to each tree four square rods, or forty trees to the acre. It has been estimated by parties fully acquainted with the subject, that the average yield of the orchards of Western New York is fully four bushels to the tree, or one hundred and sixty bushels per acre.

The nutritive value of the product of an acre of apples, at the yield that I have assumed, as compared with that of the known average product of any of the cereals, also of the root crops generally grown, and grass, is considerably greater; then the orchards are many of them cropped—all, in fact—either with grain or grass. The labor and cost attending the annual supply of seed, of tillage, for culture, harvesting, and marketing the grain and root and hay crops, is much greater than the apple crop. We are comparing the relative nutrition of the apple, cereals, roots, &c., for feeding; but when we consider the very high price commanded in market by many choice varieties of apples, we find their market value much greater than for the purpose of feeding. It will be claimed that the apple is much more perishable than the other crops with which we are comparing it. This we admit, but at the same time we claim that the cost of preserving them, in the use of ice, is nothing; on the contrary, is found to be very profitable. Some varieties, and good yielding ones, are annually sold in Southern markets, by the barrel, at six to eight dollars per barrel.

We have reliable record of the product of isolated trees, which may be startling to many; *e. g.*, according to a paper read at a New York State Fair

by Mr. H. T. Brooks, published in the Agricultural Report of 1868, a single tree near Rochester, N. Y., gave at one picking seventy-five bushels; another in Massachusetts yielded eighty bushels, and another in the same State yielded 121½ bushels.

These are, of course, extreme products, but there can be no doubt but that the average yield could, by carefully investigating all the conditions under which these extraordinary yields were obtained, be greatly augmented, and the writer does not hesitate to give it as his opinion, founded on an experience of more than twenty years in the culture and management of orchards, that the average product of the districts he has named may easily be doubled, and at a very trifling cost.

Very few orchards in any part of the country are judiciously cultivated and managed. Many have been very carelessly planted, and have had no care or attention for years. Others have been pruned more with a view to remove all limbs that interfere with the tillage of the orchard than the benefit of the trees. Pruning, as it is generally practiced, is a much greater injury than advantage to the trees.

Notwithstanding the proper time for pruning has been published and republished in our State and Agricultural journals, yet the old practice of pruning in the winter or early spring is still general.

It is a well established fact that a limb of very considerable size, amputated at that season or in the early winter, will rarely heal over, but the end of the limb will check, and the wood exposed seems to lose all vitality. Water fills the checks in the end of the wood exposed, which, being warmed by the sun, supplies the effective agents of decomposition—the wood soon decays, the cavity annually enlarges until it frequently extends down the trunk to the ground.

In orchards that have been pruned at the season that I have condemned, a large proportion of the trees will be found hollow in the trunk and their general condition unthrifty.

With proper attention to this branch alone, in the care of orchards, their value will be more than double what it would be under the condemned system.

An apple orchard should never be planted in a soil having a tenacious clay subsoil, nearer than two feet six inches below the surface.

Strong sandy and gravelly loam, with a liberal proportion of vegetable matter in it, is the best adapted to orchard purposes. Its condition as to moisture or water in the soil should be such as to adapt it well to the growth of winter wheat. The soil, except it be very sandy or gravelly, should

always be deeply subsoil ploughed, and where there are any indications of an excess of wet, even in winter, should be well underdrained, and the drains should not be less than three feet in depth. Where a soil is deficient in vegetable matter, it will be found of great advantage to incorporate with the natural soil, in setting the trees, a liberal application of compost made of muck, marsh mud or woods' mould, lime and wood ashes, leached, if unleached are not obtainable.

I consider the ashes of hard wood, unleached, worth thirty cents per bushel to mingle with the soil used in setting apple trees for an orchard, and in dressing the surface of the land for the space of three to four feet in a belt around each tree, extending from the outer margin of the hole in which the trees are set.

After the roots have had time to extend throughout the area ashed, it will pay equally well to dress another lot of similar width. Two bushels of ashes thus applied to each tree during the first five years of their growth in the orchard, costing sixty cents, will prove an economical application. I would not think of planting any more apple trees at any time than I had strawy barn-yard manure, or straw with which to mulch thoroughly a circle fully four feet greater than that occupied by the roots at planting. The mulching should be extended say two feet in width as often as the extremities of the roots have reached the extent of the mulched area.

A common error in applying mulching to trees, is in placing it, when applied, immediately around the trunks, instead of directly over, and just beyond the point to which the roots have extended, by which to protect and keep moist the soil where the terminals of the roots require that condition to insure thrift and development.

All mulches of light material should be removed from around the trunks of young trees, particularly in winter, as it forms a harbor for mice.

J. WILKINSON,

Landscape Gardener, &c., Baltimore, Md.

[To be continued.]

VIRGIN SOILS IN THE SOUTH.—The South has an immense area of new lands yet untouched by the plow, and from this soil will arise a wealth, grandeur, and power new to those States. The amount of government lands in acres in the cotton States is put down as follows: Alabama still has 6,790,996; Mississippi, 4,828,069; Louisiana, 6,582,841; Arkansas, 11,574,430; Florida, 17,425,438; whilst Texas has over seventy millions belonging to herself. The homestead and pre-emption laws of the United States afford an easy means to the immigrant of becoming at once a thrifty farmer in any of the States where the public lands are still unsold.

POTOMAC FRUIT GROWERS' ASSOCIATION.

WASHINGTON, D. C., Aug. 27, 1870.

To the Editors of the Maryland Farmer:

The Potomac Fruit Growers' Association held its regular monthly meeting at the Board of Trade Rooms in this city yesterday.

The discussions were very practical and interesting—opening with the apple and closing with small fruits.

The list of apples for this region was discussed at some length, as at previous meetings, and the following kinds were recommended for planting here and along the Lower Potomac region:

Winter Apples.—Winesap, Newton Pippin, Rambo Winter, Limbertwig, Grindstone, Paradise, Roman Stem, Falen Walder, Lady Apple, Myers' May.

Autumn.—Smokhouse, Maiden's Blush, Fall Pippin, Pearmain, Jersey Sweet, Wough's Crab, Hugh's Crab, Smith's Cider, Keswick Codling.

Early Apples.—Early Harvest, Early Joe, Sweet Bough, Red Astracan, Carolina Red June.

Raspberries were largely discussed, and the Philadelphia recommended for general cultivation, with Brinkle's Orange, Catawissa and numerous others to be tried. For the careful cultivation of small gardens, Mr. Sanders, of the Agricultural Department, spoke of the tenderness of the Clark and other seedlings of foreign varieties, and the hardness and productiveness of the Philadelphia, Doolittle and other natives. He recommended mowing the Catawissa early in the season to such as choose to grow it as it throws up its new canes vigorously and bears its fruit on them.

Strawberries were next taken up, and Wilson's Albany headed the list for market and general cultivation. Triomphe de Gand, Jucunda, Agriculturist, Rivers' Eliza, Charles Downing and Welcome were recommended for family use.

Mr. Saunders spoke of the keeping qualities of fruits as depending upon their mechanical constituents rather than the soils in which they grew, and early gathering of winter fruits was generally recommended. The necessity of clean, thorough cultivation of fruit trees and plants of all kinds was specially insisted upon, and mulching during the early summer to protect from drought, and strawberries in autumn to protect from cold.

The meetings of the Association occur monthly, on the first Wednesday. The Society, though in the early stages of its history, is doing much to advance the fruit growing interests of this region. It includes in its membership several very distinguished names, and deserves the support of every one interested even to the extent of a garden in fruit culture. The great importance of local knowledge in the adaptation of varieties to climate and soil is becoming more and more clear every year. It can be

promoted best by associations, which bring producers face to face, and in familiar conversations and discussions facts come out and get published which would never be written otherwise. The growers of fruit are singularly reluctant to write, as all farmers are in fact. But in a meeting of neighbors and friends their enthusiasm leads them to communicate knowledge informally, which the reporters pick up and publish. The fruit interest of the Potomac region, as all over the South, is just beginning to awaken attention. It has been greatly damaged by ignorance of varieties and culture. Well intentioned growers have been setting Northern varieties and Northern trees, even often bought of irresponsible pedlars. We have now fine local nurseries, among them that of Chilkley Gillingham, Vice-President of the Association, who has given twenty years to the study of fruits, and especially of apples adapted to this region. His collection includes about fifty varieties of Southern origin, among them apples that cannot be surpassed anywhere for deliciousness and good keeping qualities. We want first to learn what to plant, next how to plant and tend. Then buy only of reliable men, in our own vicinity. Let us do this and we shall hear no more of the nonsense that we cannot raise good winter apples in Maryland and Eastern Virginia. Except in the mountains, we have already on the Potomac, fine orchards of long keeping fruit, but unfortunately they are few and small. We have vineyards too of limited extent, but enough to show that the banks of our noble river might be made to equal in beauty and fruitfulness those of the Rhine. Our Association hope to do something towards realizing such a consummation. We will try to keep you posted in our doings.

E. D.

SPINACH FOR SPRING GREENS.—There is always a desire in spring for something green and fresh to give a relish to other food. A majority of farmers, who make far too little preparation for such cheap luxuries, may easily supply this want by a few beds of spinach sown upon such grounds as have been used for summer crops. The soil should be made rich, and the manure thus applied will be an excellent preparation for the next spring's crop, after the spinach has been removed. It will not pay sown on poor ground. Having the beds ready, they may be sown at intervals from the first to the end of September, in rows far enough apart to be easily cultivated with the hoe, to keep the plants free from weeds. Two kinds of spinach are usually grown—the round leaf for spring sowing, and the pointed leaf or prickly for fall planting. Either can be sown, though the prickly is the more hardy.

Zeal without knowledge is fire without light.

TRIAL OF REAPERS AND MOWERS.

To Thomas H. Barrows, President and Prof. of Agriculture, and ex-officio member of the Board of Trustees of the Agricultural College of Pennsylvania :

The undersigned, George W. McDowell, of Clinton county ; Samuel McKean, of Centre county ; S. H. Graham, of Washington county ; George Y. McKee, of Allegheny county, and R. R. Bryan, of Huntingdon county, committee appointed by the trustees at the instance and request of the exhibitors to award upon the relative merits of the several mowing and reaping machines entered for competition at the Harvest Home, 27th and 28th July, 1870, most respectfully report.

That of the eight machines presented as mowers, two to wit : the Kirby and the Champion, were single mowers, and of these two, the Champion was considered the best. The remaining six, to wit : the Excelsior, the Keystone, the World, the Hubbard, the Dodge, and the Ohio Harvester were combined machines, and as such we considered the Hubbard the best mower of the whole eight upon the ground. It is proper to say that this particular Hubbard machine is the property of the Central Experimental Farm connected with the college and has been run during this season, and was on this occasion driven by the agent of the Hubbard, J. R. Alexander.

The same machines were entered for the reaping contest, excepting the two single mowers had on this trial their combined machines, which arrived too late for the reaping contest of the preceding day. Three of them, to wit : the Excelsior, the Keystone, and the World, were operated as droppers, and as in our experience many farmers prefer the dropper on account of the simplicity of mechanism, we selected the Excelsior as the most satisfactory dropper. The Champion, as a self-raker, in view of the superior arrangement of its reel-post and in other respects, was in the opinion of a majority of the committee the best self-raker, and as a machine best calculated to render satisfaction *all purposes* of the farmer who only desires to invest in one, in view of simplicity of construction, lightness of draft and other important features, a majority of the committee agreed that the Excelsior was the most desirable.

A correspondent of the *American Agriculturist* picks and stores his squashes in September and has them sound till the following June. He says : "Gather the squashes for late keeping between September 1st and 10th, taking only those that grow near the root ; put them on the shelves where they are to be kept, and keep them dry and cool.

THE WHEAT CROP OF AMERICA—SOW MORE.

The absurd sayings and doings of provincial towns and villages, have been the subject of wit and humor, from time immemorial. Not quite so well written about, but scarcely less absurd, are many of the notions that prevails among out-of-the-way neighborhood farmers. Impressed with the idea that their little mole-hill is a great mountain that overlooks all the world, these unco-wise gentry are wont to predict, and declare what is and what is not to be, with far more of arrogance than king Solomon of old ever did. We are directly led to these reflections by the remark recently made in our presence by one of these little wise-acres to the effect, that if all the farmers in the country should follow our advice, and sow more wheat, the market would be glutted and wheat would bring nothing. That for his part, he should put in enough to use and no more. Against such short-sighted stupidity it is useless to reason. There is, however, a large class of reasonably intelligent farmers, who without the data upon which to form a correct opinion, are in doubt as to the demand there is likely to be for wheat. For the benefit of this class, we collect a few facts from the monthly report of Agriculture, the COUNTRY GENTLEMAN, LONDON FIELD, and other sources.

Not the most careless observer can have failed to notice the fact that as the harvest approaches every year, the price of the old crop runs up rapidly, and there is a feverish anxiety in the public mind to know the state of the new crop. This anxiety is largely due to the fact that the supply is so little in excess of the demand that there is left no margin for a short crop. What we witness here is well described by the MARK LANE EXPRESS, of England, which says: "Exhausted as the stocks of wheat are in every country in Europe, and those of America, as well, there need be more than an average crop in the wheat growing countries of the world to meet the demands of Western Europe, and re-instate the usual stock." Here we have the fact established that with the demand stationary, it required a full crop to meet it. But the demand is not stationary. It is steadily on the increase from two distinct and permanent causes.

1st. The increase of population.

2nd. The increased consumption of wheat attending the advancement in the mode of life of the masses of men.

To meet this natural increase, there had been, in America, a steady increase, in the number of acres sown and the crop gathered, previous to the war. But the war reduced this amount by many millions of bushels, and it has only this year reached the amount of the crop of 1861. So that the last eight

years may be thrown out as lost. But though the supply has not increased, the demand has kept on growing. The population has increased, steadily, and the use of wheat has been largely increased by the increase in emigrants, who do not use Indian corn.

According to the estimates of the Department of Agriculture, there have been an average of 20,000,000 acres of wheat harvested in this country for the last two years. Allowing an average of 10 bushels to the acre, which is quite as much as it will turn out, there will be harvested 200,000,000 bushels of wheat. Estimating that only the same amount of land is put in wheat for the next crop, at 2 bushels to the acre, which is ascertained to be the average, there will be required 40,000,000 bushels for seed wheat, leaving 160,000,000 bushels for flour. The estimated present population of the United States is 40,000,000. And it is calculated that five bushels per head is an average of the amount used, so that, if all were to rely upon wheat for bread, it would require full 200,000,000 bushels, leaving nothing for seed. But there are several other articles of breadstuff that take the place of wheat, so that the wheat crop will not be required to make all the bread. It is only reasonable, however, to estimate that at least 150,000,000 will be required for bread. This leaves only a margin of 10,000,000 for exportations, an amount entirely too small for the demand.

Thus it is from this brief and fragmentary showing, apparent to any intelligent observer that at least the present demand, will be kept up, even if the next crop should be, the world over, as good as the present. While if, as there are innumerable probabilities will be the case, the crop should fall short in any considerable wheat section, the prices must be so far increased. In view of these and many other considerations, we advise and urge upon the Farmers to stick to wheat. Immediately and in the future it will pay.—*Milling Journal*.

CARE OF TEGS.—Many portions of the country are so parched by drouth that the pastures are dried up, and there is but a trifle of after feed in the meadows. This makes it a very bad period in such places for weaning lambs which particularly require succulent feed for a period after being deprived of the accustomed supply of milk. It should be provided for them if practicable; and if they are improved and valuable, it should be provided at considerable sacrifice. Grown sheep which reach the winter thin, may be kept up by careful treatment, but if a flock of tegs reach it in that condition there is but little hope for them.—*Rural New Yorker*.

You never lose by doing a good turn,

An Experiment in Wheat Culture.

Mr. Samuel Baily, of Maxey, Geo., raised nearly fifty-seven bushels of wheat on an acre of ground, and this is the way in which he did it:

In the first place, the land was thin and exhausted; had been in corn the previous year, and by the use of manure he succeeded in making seventeen bushels of that crop on the acre.

About the last week in October he broke it up with a two-horse Brinly plow. Upon this he spread broadcast six two-horse wagon loads of well-rotted stable manure, which was turned under by a cross-plowing with the same plow. Upon this he sowed broadcast two hundred and fifty pounds of dissolved bone, which was harrowed in with a two-horse revolving harrow. He then sowed one hundred and twenty pounds of wheat on the acre, and covered it with a heavy brush, dragged over it by two mules. The clods were beat down with a maul in the absence of a roller. This was on the 2d of November. In the early part of February, the wheat being then about six inches high, he sowed broadcast a top dressing of two hundred and fifty pounds of ammoniated phosphate. Late in March, when the wheat was in the boot, he applied two hundred and fifty pounds of ammoniated dissolved bone and fifty pounds of salt ground together. This was applied early in the morning on the dew, one-half the mixture first and the other half at the end of a week.

The grain was cut off with a common reap hook as it ripened in places, commencing on the 4th of June. The production of the acre was three thousand and four hundred and fifteen pounds of good wheat. Mr. Baily does not know what the six loads of stable manure cost him, but the prices of the others are as follows:

250 lbs. dissolved bone.....	\$8 75
250 " ammoniated phosphate.....	7 50
150 " dissolved bone.....	10 00
75 " common salt.....	1 30
	<hr/> \$27 55

The land was measured and the wheat threshed and weighed by disinterested persons.—*Rural Carolinian*.

SAVING SEED WHEAT.

Every farmer should make an effort, during wheat harvest, to secure a new variety of wheat, or to improve some old variety, that is now cultivated with a fair degree of satisfaction. The best time in all the year to commence is, when the crop is about ready to be harvested. At such a time, one can judge more satisfactorily of the kind and character of the grain he desires to cultivate, than when he sees it in any other condition. If the entire crop has sprung from seed that has been selected with

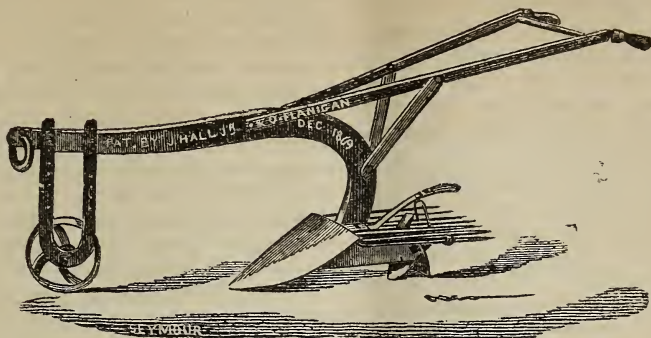
care, for a few years past, one can select the grain that is standing on a area of a few rods square, allow it to stand until the kernels are fully matured, then harvest that part of the crop after all the rest of the grain has been gathered. Of course, such seed wheat should be kept by itself, on the top of other grain, so that kernels of an inferior quality may not mingle with the seed grain. In case one has access to nothing but a field of grain of an inferior quality, the true way is to walk through the standing grain, examine the heads of a certain character for early maturity and for being plump, and beautiful grain. Then, select a hundred such ears all of which shall be as nearly alike as practicable. After shelling out the grain, let all the small and inferior kernels be rejected, and put the chosen seed in an open vessel, or paper box, where it may be kept safely until seed-time. If the variety is spring wheat, of course the seed should be kept in a secure place. If the grain is winter wheat, let it be dibbled in, one kernel in a place, in the field, or garden where the soil has been thoroughly manured the previous season. Wheat must have the benefit of a rich soil which abounds largely in inorganic fertilizers, as well as in rich organic manure. Let this practice be followed up for a few successive years, and it will not be difficult to double the wheat crop, without incurring the expense of extra cultivation. The best time for dibbling-in the seed of winter wheat will depend upon the locality, varying from the first of September to the middle of October.—*Working Farmer*.

Two Ploughings before Seeding Wheat.

Where the wheat crop only is the object, but especially where the intention is to lay down to grass for a few years, we think two ploughings should never be omitted, and will be well paid for by the results. So soon as possible after oats is off, the first ploughing should be given in anticipation of the usual drought the present month, when it is sometimes almost impossible to plough at all. This first ploughing lifts, pulverizes, aerates and mellows the soil, giving the grass seed a much better chance to take; and in a grazing or dairying region where grass is the principal object, and the soil inverted only once in a few years, *no chance*, in the rotation of cultivated crops should be omitted to expose fresh surfaces to action of the atmosphere. Top-dressings of lime or other fertilizers, will afterwards suffice to keep up a good sod for many years.

Timothy is usually in this section, sown in the fall with the wheat; and that it does not take well is often owing to a single ploughing being made, and the soil turned up in cakes and blocks, which, in a dry time, it is impossible to pulverize. Let it not be forgotten, "that good tillage is manure."
—*Practical Farmer*.

HALL'S POTATO DIGGER.



The above cut is a representation of a Potato Digger invented by John Hall, Jr., of Pittsburgh, Pa., and which was placed on trial recently near Baltimore, an account of which will be found in another column.

The plow consists of an iron beam and common, flat-shaped shovel, over which the earth passes, and is sifted by means of a riddle or separator, which throws the potatoes to the surface and leaves them ready to be placed in baskets. The riddle consists of a series of parallel rods, which are hinged to the rear part of the shovel, and are shaken by an agitating wheel so as to sift the dirt from the potatoes.

STATISTICAL CORPS FOR HOWARD COUNTY.

A correspondent in the *Ellicott City Times*, makes the following announcement of the organization of a statistical corps for that County. Similar corps instituted in each County in our State, in correspondence with the Agricultural Department at Washington would prove of great value to our farmers, and should be speedily organized. He says:

In accordance with the spirit of Agricultural progression so active now throughout the County, allow me to announce that Howard County is in full co-operation with the Department of Agriculture at Washington, under the able management of the Hon. Horace Capron, formerly a scientific agriculturist of this County. The Corps appointed is as follows:

Chief of Corps, Dr. H. G. Lawrence, Postoffice at Clarksville; Second District, Hon. Thad. S. Clark, P. O. at Ellicott City, Third and Fourth Districts, Judge H. O. Devries, P. O. at Marriottsville; First and Sixth Districts, Hon. Jas. Morris, P. O. at Clarksville.

The object of this organization is to keep the Agricultural Bureau fully informed in regard to the productions of every branch of Agriculture in the County, results of new seeds, processes and implements, any new or epidemic disease among cattle, depredations of dogs among sheep, and such information as would be generally important. Should any disease break out among farm stock the affair should be at once reported to the proper authority that it may be speedily investigated and general contagion prevented. Farmers throughout the

County are requested to co-operate with this Corps by reporting cases of unusual yield, result of any deviation from the ordinary paths of farm operations, and any other matter that would have a tendency to increase the profits or diminish the labor of the tiller of the soil. Such reports in all cases to be sent to the representative of the District in which they are made."

Kennedyville, Kent County, Md.

The following brief description of this section of Kent County is not overdrawn. We have known it intimately for the last twenty-five years, and do not hesitate to say that no section of its area has enhanced in value or made more rapid progress.—Labor, lime, draining and intelligent culture has accomplished the work. We copy from the *Kent News*:

"Kennedyville, our beautiful little village, eighteen years ago contained only one house, which was inhabited by an old negro by the name of Mace Allen, who tilled a small patch of corn, dug wells, &c. He always planted two kinds of corn, white and yellow. His reason for doing so was that he wanted to have both kinds when the people came around looking for stolen corn. But old Mace has passed away, with his dwelling, where now stands the hotel. There are three stores in the place, wheelwright and blacksmith shops, quite a number of new, substantial dwellings, and a M. P. Church.—The surrounding country has been highly improved and is now very productive. Land that was purchased here eighteen years ago for \$15 per acre will now bring from \$100 to \$150. The Kent County Railroad runs through the village, by which the farmers are shipping their produce by daily trains to New York, especially peaches, which are bringing good prices."

Horticultural.

MARVEL OF PEACH GROWING.

BY EDMUND MORRIS, BURLINGTON, N. J.

The present will be counted as a memorable year in the history of peach culture. Wherever a tree would grow, it seems to have borne profusely. Though immense orchards were last winter enveloped in an icy sheet, which covered their branches with a thick crust during five days, yet the fruit buds came out uninjured. No other casualty having been experienced, the yield is believed to be unprecedented. Whole orchards have been weighed down with fruit; many trees, to their certain injury, losing valuable limbs. The trees in private gardens, where the soil is richer and the attention greater, have required extensive propping to save them from destruction. The fruit, moreover, has been fair and good. As a result of this abundance, the masses have been supplied with peaches at lower prices than for many years. One season ago, it was a famine; this season it is a surfeit. Such almost unprecedented abundance of this luscious fruit has seriously affected the prices of all contemporaneous products. When even indifferent peaches from declining trees came into market, an excessive crop of cultivated blackberries unsalable at paying rates. All the finer melons shared the depression, but not so ruinously. Everybody preferred peaches, and therefore neglected products, which, in the absence of the former, have uniformly been acceptable to the consumer, and remunerative to the producer.

It will be interesting to look into the facts of a crop which is thus able to produce such marked effects on the leading productions. The Middle States have long been celebrated for their peaches. At one time, New Jersey stood in the front rank of producers. She had railroad facilities which enabled her to throw her fruit into New York and Philadelphia in from two to four hours' travel; but the smaller fruits, with truck, had not become the staples they are at present. The trees thrive as they do now, bore well, and the business of peach growing was extremely profitable. In time, the cultivation extended to Delaware. There it has been extending as new and cheaper outlets were created by the building of recent railroads. New Jersey, discovering that other fruits paid better because of her nearness to the two great markets, gradually reduced the size of her orchards, though her farms are still dotted with them. But Delaware is now the undisputed centre of that peach culture which supplies the North with this popular fruit.

The first really great Delaware orchard was planted in 1838 by Jacob Ridgway, the Philadel-

phia millionaire. Other large ones were soon established. About this time, a small orchard of forty acres realized a clear profit of nine thousand dollars from a single crop—about ten times more than the land was then worth. This great profit set people crazy to plant trees; and, from that day to this, the peach culture has been extending. It is no doubt more active now than at any former period. Though the crop sometimes fails, yet the average gain of a term of years is larger than from any other form of agriculture in that State. Moreover, the borer is not so common as elsewhere; and an orchard, with fair precaution, will live many years. Some two millions of trees are now planted in Delaware; and hence the avalanche of peaches which overwhelms the markets in such a season as this. As the business pays well, lands have risen largely in value, those on the lines of new railroads being most enhanced, and worth a hundred and fifty to two hundred dollars an acre. A like result is observable in Maryland, where peach planting has also been extensively introduced; but, being farther from the great markets, the rise has not been so great.

It is the study of the peach grower to have his fruit ripen in succession, so as not to be inconveniently hurried in getting it into market. To secure this end, he plants the following, which ripen in the order given: Hale's Early, Troth's Early, Early York, Crawford's Early, Reeves' Favorite, Oldmixon, Ward's Late, Fox's Seedling, Crawford's Late, Delaware White, Freeman's White and Smock's yellow. By this arrangement, he has peaches in market from July 20th to October. Though there is a general struggle to get the earliest possible variety, yet, as a general rule, the late varieties pay the best profits. The first-planted orchards were usually of from ten to fifty acres; but now there are some embracing a thousand acres each. At five to six years old, a tree will produce three and sometimes four bushels; but the average of a large orchard does not much exceed two bushels. The present season over five hundred bushels have been picked from a hundred and fifty trees of Troth's Early. The product of some of these orchards, in this abundant season, is astonishing. The Messrs. Corbitts, with three hundred and fifty acres, will ship ninety thousand baskets of three pecks each. Hundreds of others will ship from three thousand all the way up to eighty thousand baskets each. Mr. Fennimore will ship thirty thousand. Last year this gentleman was the only one who had any peaches; and his crop of forty-two hundred baskets averaged him six dollars. Everywhere the trees are bending down with splendid fruit, as not a single orchard appears to have failed of a crop. Hence the enormous quantity

sent to market—estimated at five million baskets.

Peach growing has become a leading staple of Delaware. An immense machinery is required to handle and transport to market such a crop; hence the railroads thrive. There are five to seven long daily peach trains to Philadelphia and New York, some of them with thirty cars in each. In addition, vast quantities reach market by sloops, schooners and steamboats, whose sole employment it is to transport peaches. During the picking season, the entire region is alive with bustle. Go where one may, he will find the road crowded with loaded wagons, and the orchards swarming with pickers. The gathering of such a crop employs three thousand men, women and children, in merely picking it from the trees. The men receive their board and a dollar a day; the others, only half as much. Other industries feel the stimulating effect of the peach trade. A large number of hands are employed in making baskets and crates. Then, while some are canning the fruit in large quantities, others are running stills, and converting the spoiled fruit into brandy. Of course, there has been speculation in the crop. Early in the season, the dealers from New York came in and bought up some two hundred orchards, paying forty to fifty cents a basket all round, the owner to pick up and deliver the fruit at the nearest landing or station.

There are orchards here which die out in five or six years; but this early mortality is entirely by reason of the owners' neglect. In planting an orchard, trees one year from the bud are considered the best. These are purchased from the nurseries at thirty to fifty dollars a thousand. The young orchard thus planted is usually cultivated with corn for three years, at the end of which period the ground is too much shaded for further cropping, and the trees are coming into bearing. All this time, the soil must be well cultivated and manured, as want of cultivation is certain ruin to a peach orchard. If borers attack the trees, they must be taken out, or the life of the tree will be very brief. It is those orchards which are neither well cultivated, nor kept clear of borers, that die out in five or six years. Where the owner does his duty by his trees, they will bear from fifteen to twenty years. The cultivation required is principally that of frequently stirring the soil, as Delaware is not infested with the quick growth of rank weeds that may be seen in South Jersey.

The peach crop of the present season, enormous as it has been, will probably pay a fair profit. The cultivation is more likely to increase than to diminish, because the machinery of distribution is annually becoming more perfect. A more direct route to New York will probably be opened next year by the Vineland Railway, and new lines of

sea-going steamers are in contemplation. These will deliver peaches at Boston more readily than now, and will insure cheaper and more complete distribution all over New England. The peach traffic is already so gigantic as to be worth competing for by rival routes. Let these routes only furnish prompt and convenient transportation, and it will be found that Delaware alone can supply all the peaches that New England may be willing to consume.—*Tilton's Journal of Horticulture.*

Twig Blight on the Apple.

Dr. Warder, the author of the "American Pomology," thus speaks of the twig blight:

This malady, which has long been known and suffered by the orchardists of Illinois and other Western States, has made its appearance in portions of Ohio this season in an unpromising abundance. The disease has heretofore been observed among us, but in a moderate degree, scarcely attracting attention; but now, in some orchards, one-half of the foliage is affected, and some trees are completely browned, as though scorched by fire. When this is the case, great injury must ensue to the whole plant; when in less amount, the effect will be like that of a severe summer pruning of the twigs.

A similar affection has often been observed in the quince, and also in the Italian mulberry; and the common pear blight, when confined to small twigs, presents the same appearance. The cause of the trouble is not known, but insects have been accused of having produced the result. Nothing satisfactory has been found, however, to show the traces of insect depredations. An examination with magnifying glasses has not enabled me to find either insects, larva, eggs or stings. Some have attributed the disease to frost, some to heat, to electricity, to stimulation and to neglect. Such an array of various and adverse causes only shows how little we know about the matter.

The most satisfactory explanation is the rather tantalizing one attributing the death of the twigs to the invasion of minute parasitic plants—fungi. This is tantalizing because so few of us understand the use of the microscope, or know anything of the nature and character of the wonderful world of miniature objects which are revealed by its use; moreover, we are further tantalized because the enemy is so minute as to be beyond the reach of our clumsy manipulations.

BROOM CORN MACHINERY.—Those who have inquired of us for information about broom corn machinery are referred to the Messrs. R. H. ALLEN & Co., New York City.

The Dairy.

MILKING.

There is an art in milking a cow as well as in doing anything else, and one which many who have the care of cows seem not to appreciate to the extent they should for their highest interest; for unless a cow is properly milked she will not yield her greatest profit.

The exact process of a good milker, one who obtains the largest quantity of milk from a cow regularly, keeps her in milk the longest, is much easier explained by seeing the actual practice than by any attempt with the pen, or oral instruction; and then one must have practice, as in any other trade, to obtain the art; yet when one obtains it he is prone to think it a very simple one, and thinks that any one who has sufficient strength in their hands and wrists can do it, without reflecting that it took much practice and some thought for him to master the simple art.

In the first place, to make milking as little disagreeable as possible, it is necessary to obtain and preserve the good will of the cow, and to treat her with the utmost kindness and gently. Where gentleness is used by the milker, the cow seems to enjoy the pleasure of being milked as a relief to her overstrained udder; and she will stand quietly chewing her cud till the operation is finished, in summer time, if milking is accomplished in a reasonable time, when she will seek her accustomed place and lie down with a grunt of seeming satisfaction, to continue her rumination. The milking should always be done as quickly as possible after being commenced, without any interruption or talking, *quietly*.

In order to milk with ease, the milker should procure, in the first place, a milking stool. I have found one made as follows as convenient as any: Take a board, or piece of slab, about twenty inches long, ten inches wide at one end, tapering to six inches at the other, and put three legs to it, two at the wide end, about eight inches long, set slanting, the bottom ends widest apart to stand firm, and one at the narrower end an inch shorter, to stand perpendicular when the stool is finished; the wider end will answer to sit on, while the narrow end is thrust under the cow's udder to set the pail on while milking; this keeps the pail free from any dirt or filth. I prefer to milk, in pleasant summer weather, in the open air, without confining the cow, except in an open yard. Approach the cow on her right or off side, and gently touch her on the hip—if she does not freely of her own accord come into position—and she will place her foot a

little back, exposing her udder to the best advantage for milking; set your stool in position and sit down on it, placing the pail on the end under the cow's udder, if it be clean and free of dust, etc.; if not, first clean it with a wisp of hay or straw, and then with a cloth for the purpose; I prefer this mode to washing with water, as frequently the cow resents it by holding up her milk; with properly arranged stables and bedding for winter, this is all that will be necessary in keeping the cows clean, and will be found better than to use water. When the udder and teats are clean, sit quietly down—not off at arm's length, but close as convenient—so that the left arm may rest against the cow's leg while drawing the milk, and will be handy to save the pail and milk, if the cow starts or kicks, by leaning it firm and strong against the leg, which will throw the cow's hind parts off and leave you and the pail uninjured. Take hold of two teats, one in each hand, one forward and the other back, no matter whether both teats are on one side or one on either side; clasp the teats in the hands, leaving the lower end to project a little below the hand, and squeeze, shutting the fingers, the inside ones first and then the outer ones, and the milk will come, which if directed toward the pail will most likely go therein. When nearly through but little milk will answer to the squeeze; take now both hands to one teat, one to gently press and draw the milk down the udder, and the other to squeeze from the teat as before; continue this drawing and squeezing as long as any milk will flow, trying each teat by turns; the last strippings are the richest in cream and should be all drawn, not only on that account, but for the good of keeping the cow longer in milk, free from disease of the udder or other ill effects. After the above it would be superfluous to say that the finger nails should be cut close, that they may not be the means of hurting the cow and thereby making her uneasy. If she starts do not sing with a sharp voice, So! and start after her with the stool raised; but to use gentleness and speak kindly, and thereby gain the good, instead of the ill-will of the cow. Kindness and gentleness go much farther in subduing a dumb animal than any other course.—W. H. W., in *Working Farmer*.

TRANSPLANTING ROSES.—A horticulturist answers the question, when to transplant roses, as follows: We have succeeded well by transplanting in September or October but we prefer early spring. We should not hesitate to transplant in the fall if we were ready to do so, however. All the leaves should be stripped off, the shoots pruned closely, and plenty of water given them. Any time after the terminal buds are formed before the buds starts in spring transplanting can be safely done.

CIDER.

As cider time is at hand, we publish the following information as to its proper manufacture, furnished us by a friend, which will be of much use to those who will give it due attention, in enabling them to secure a better quality of this delightful beverage. Our friend says that "much of the excellence of cider depends upon the temperature at which the fermentation is conducted, and is a point greatly over-looked by the manufacturers of this liquor. As soon as expressed from the fruit, it should be strained into sulphured casks and placed in a cool situation where the temperature does not exceed 50 deg. Fah't—if left in the heating sun much of the sugar is converted into vinegar by the absorption of atmospheric oxygen, and thus the liquor becomes acid and rough. On the contrary, if the fermentation be conducted at a low temperature, nearly the whole of the sugar is converted into alcohol and remains in the liquor instead of undergoing the process of acetification. The acetous fermentation of the conversion of alcohol into vinegar proceeds most rapidly at a temperature of ninety-five degrees Fahrenheit, and at lower temperatures the action becomes slower, until at forty-six degrees Fahrenheit no such change takes place. Independently of differences in the quality of the fruit, this is the principal causes of the superiority of the cider made by one person over another, living in the same neighborhood. The one has a cooler cellar or barn than the other to store his cider in. In practice it has been found that sour and rough apples produce the best cider. This arises because they contain less sugar and more malic acid, and the presence of the latter impedes the conversion of alcohol into vinegar, but cider made with such apples can never equal in quality that prepared at a low temperature from fruit abounding in sugar, which, if properly strained or racked at every indication of fermentation, will keep good twenty years.—*Knoxville Whig*.

A correspondent of the *Country Gentleman*, who has been abroad, says that the cause of the superiority of English and continental mutton over that in America, is in the simple sentence, "they feed turnips." The *Practical Farmer* endorses this opinion, and insists that our sheep breeders, to raise the best mutton, must raise ruta bagas and turnips.

A correspondent of the *Germantown Telegraph* who lost seventy chickens by gapes, last year, now says that fresh water, daily, with a lump of roll brimstone kept in it, will be found a certain preventive.

Good farmers do not refuse to make correct experiments in a small way of many new things.

CANNING TOMATOES.—In the *Syracuse Union* we find the following: "The most thorough and reliable mode of canning tomatoes is as follows: They are just sufficiently steamed, not cooked, to scald or loosen the skin, and are then poured upon tables and the skin removed, care being taken to preserve the tomato in as solid a state as possible. After being peeled, they are placed in large pans, with false bottoms perforated with holes, so as to strain off the liquid that emanates from them. From these pans they are carefully placed by hand into the cans, which are filled as solidly as possible—in other words, all are put in that the cans will hold. They are then put through the usual process and hermetically sealed. The cans when opened for use, present the tomato not only like the natural vegetable in taste and color, but also in appearance; and moreover, when thus sealed, they are warranted to keep in any climate, and when opened will taste as naturally as when just plucked from the vine."

TOMATO CATSUP.—As it soon will be time to preserve tomatoes and make catsup the following will be found to give a superior article:

Tonatoes, $\frac{1}{2}$ bushel; salt, 6 ounces; allspice, ground, 6 drachms; yellow mustard, ground, $5\frac{1}{2}$ drachms; black pepper, ground, 3 ounces; cloves, ground, 6 drachms; mace, 3 drachms; cayenne pepper, ground, 2 drachms; vinegar, 1 gallon. Mix.

Cut the tomatoes to pieces; boil and stew in their own liquor until quite soft. Take from the fire, strain and rub through a middling fine hair sieve, so as to get the seeds and shells separated; boil down the pulp and juice to the consistency of apple-butter, (very thick) stirring all the time; when thick enough, add the spices, stirred up with the vinegar; boil up twice; remove from the fire; let cool and bottle.—*Germantown Telegraph*.

BOILED BONES.

DANA, one of the ablest and most exact chemists of his age, held the following views as to the value of boiled bones:

"It is a common opinion, that bones from the soap-boiler have lost a large portion of their animal matter. It is erroneous. Boiling, except under high pressure, extracts very little of the gelatine, and not all the fat and marrow. Heads and shoulder-blades, and the smaller bones, still contain, after boiling, $3\frac{1}{2}$ per cent. of fat and tallow. If the phosphate of lime of such bones is dissolved out by acid, the animal portion remains with all the form and bulk of the bone. Bones which are offered in the market, are quite as rich in the elements above stated, as are unboiled bones. The phosphate of lime is rendered quite soluble by its combination with gelatine and albumen."

Ladies Department.

SWEET SEVENTEEN.

A vast amount of poetry has always been thrown around that special time of a woman's life when,

Standing with reluctant feet
Where the brook and river meet,

she is no longer a child, and yet not quite a woman—that transition time between the closed bud and the full-blown flower which we in England express by the term, among others, of Sweet Seventeen. Without meaning to be sentimental, or to envelop things in a golden haze wrought by the imagination only and nowhere to be found in fact, we cannot deny the peculiar charm which belongs to a girl of this age, if she is at all nice, and neither pert nor silly. Besides, it is not only what she is that interests us, but what she will be; for this is the time when the character is settling into its permanent form, so that the great thought of every one connected with her is, how will she turn out? into what kind of woman will the girl develop? and what kind of life will she make for herself? Certainly Sweet Seventeen may be a most unlovely creature, and, in fact, she often is; a creature hard and forward, having lost the innocence and obedience of childhood, and having gained nothing yet of the tact and grace of womanhood; a creature whose hopes and thoughts are all centred on the time when she will be brought out, and have her fling of flirting and fine dresses with the rest. Or she may be only a gauche and giggling school girl, with a mind as narrow as her life, given up to the small intrigues and scandals of the dormitory and the play-ground; a girl who scamps her lessons and cheats her masters; whose highest efforts of intellect are shown in the cleverness with which she can break the rules of the establishment without being found out; who thinks talking at forbidden times, peeping through forbidden windows, giving silly nicknames to her companions and the teachers, and telling silly secrets with less truth than ingenuity in them the greatest fun imaginable, and all the greater because of the spice of rebellion and perversity with which it is dashed. Or she may be a mere tom-boy, regretting her sex and despising its restraints; cultivating school-boy slang and aping school-boy habits; ridiculing her sisters and disliked by her companions, while thinking girlhood a bore and womanhood a mistake in exact proportion to its feminality. Or she may be a budding miss, shy and awkward, with no harm in her and as little good—a mere sketch of a girl, without a line as yet made out or the dominant color so much as indicated. Sometimes she is awkward in another way, being studious and preoccupied, when she passes for odd and original, and is partly feared, partly disliked and wholly misunderstood by her own young world; and sometimes she has a cynical contempt for men and beauty and pleasure and dress, when she will make herself ridiculous by her revolt against all the canons of good taste and conventionality. But after her *début* in tattered garments of severe colors and ungainly cut, she will probably end her days as a frantic fashionable, the salvation of whose soul depends on the faultless propriety of her wardrobe. The eccentricities of Sweet Seventeen not unfrequently revenge themselves by an exactly opposite mature extravagance. But though there are enough and to spare of girls of all these patterns, the Sweet Seventeen of one's affection is none of them. And yet she is not always the same, but has her different presentations, her varying facets, which give her variety of charm and beauty.

The best and loveliest thing about Sweet Seventeen is her sense of duty—for the most part a new sense. She no longer needs to be told what to do; she has not to be kept to her tasks by the fear of authority or the submissive grace of obedience, but of her own free will, because understanding that it is her duty, and that duty is a holier thing than self-will, she conscientiously does what she does not like to do, and cheerfully gives up what she desires without being driven or exhorted. She has generally before her mind some favorite heroine in a girl's novel, who goes through much painful discipline and comes out all the brighter for it in the end; and she makes noble resolves of living as worthily as her model. She comforts her soul, too, with passages from Longfellow, and Tennyson and the *Christian Year*, and learns long extracts from *Evangeline* and the *Idyls*; poetry having an almost magical influence over her, nearly as powerful as the Sunday sermons she listens to so devoutly and tries so patiently to understand. For the first time she wakes to a dim sense of her own individuality, and confesses to herself that she has a life of her own apart from and extraneous to her mere family membership. She is not

only the sister or the daughter living with and for her parents, or her brothers and sisters, but she is also herself, with a future of her own not to be shared with them, not to be touched by them. And she begins to have vague dreams of this future and its hero—dreams that are as much of fairyland as if they were of the young prince coming over the sea in a golden boat to find the princess in a tower of brass waiting for him. Quite impersonal, and with a hero only in the clouds, yet nevertheless these dreams are suggested by the special circumstances of her life, by her favorite books or the style of society in which she has been placed. The young prince is either a beautiful and high-souled clergyman—not unlike the young vicar or the new curate, but infinitely more beautiful—an apostle in the standing collar and single-breasted coat of the nineteenth century; or he is an artist in a velvet blouse and with flowing hair, living in a world of beauty such as no Philistine can imagine; or he is a gallant sailor, with blue eyes and a loose necktie, looking up to heaven in a gale, and thinking of his mother and sisters at home, and of the one still more beloved, when he certainly ought to be thinking of tarry ropes and coarse sailcloth; or he is a magnificent young officer heading his men at a charge, and looking supremely well got up and handsome. This is the kind of *future* she dreams of when she dreams at all, which is not often. The reality of her mature life is perhaps a stolid country squire, or a prosaic city merchant without the thinnest thread of romance in his composition; while her own life, which was to be such a lovely poem of graceful usefulness and heroic beauty, sinks into the prosaic routine of housekeeping and society, the sigh after the vanished ideal growing fainter and fainter as the weight of time and fact grows heavier.

Married men are all sacred to Sweet Seventeen when she is a good girl, so are engaged men. For the matter of that, she believes that nothing could induce her to marry either a widower or one who had been already engaged, as nothing could induce her to marry any man under five foot eleven, or with a snub nose or sandy whiskers. Sweet Seventeen has, in general, the most profound version to boys. To be sure, she may have her favorites—very few and very seldom; but she mostly thinks them stupid or conceited, and resents impartially either their awkward attentions to herself, or their assumptions of superiority. An abnormally clever boy—the poet-laureate or George Stevenson of his generation—is her detestation, because he is odd and thinks every one else; and the one that she likes best among them is the school hero, who is first in the sports and takes all the prizes, and who goes through life loved by every one, and never famous. For her several brothers she has a range of entirely different feelings. Her younger school-boy brothers she regards as the torments of her existence, whose unkempt hair, dirty boots and rude manners are her special crosses, to be borne with patience, tempered by an active endeavor after reform. But the more advanced, and those who are older than herself, are her lovers, for whom she has an enthusiastic admiration, and whose future she believes in as something specially brilliant and successful. If only slightly older or younger than herself, she impresses them powerfully with the sentiment of her superiority, and patronizes them—kindly enough, but she makes them feel the ineffable supremacy of her sex, and how that she, by virtue of her womanhood, is a glorified creature beside them—an *Ariel* to their *Caliban*. Now, too, she begins to speak to her mother on more equal terms; to criticise her dress, and to make her understand that she considers her old-fashioned and inclined to be dowdy. She ties her bonnet strings for her, arranges her cap, smartens up her old dress and compels her to buy a new one, and while considering her immeasurably ancient likes her to look nice, and thinks her in her own way beautiful. Sometimes she opposes and quarrels with her, if the mother has less tact than arbitrariness. But this is not her natural state: for one of the characteristics of Sweet Seventeen is her love for her mother, and the need she feels to have of her better counsel and guidance; so that if she comes into opposition with her it is only through extreme pain, and the bitter teachings of tyranny and injustice. This is just the age, indeed, when the mother's influence is everything to a girl, and when a silly, an unjust or an unprincipled woman is the very ruin of her life. But with a low or evil-natured mother we seldom see a Sweet Seventeen worth the trouble of writing about, which shows at least one thing—the importance of the womanly influence at such a time, and how perhaps so much that we blame in our modern girls lies to the account of their mothers.

Great tact is required with Sweet Seventeen in such society as is allowed her; care to bring her out without obtruding her on the world, or making her forward and consequential, and without attracting too much attention to her. She is no longer a child to be shut away in the nursery, but she is not yet entitled to the place and considera-

tion of a member of society. And yet it would be cruel to debar her wholly from all that is going on in the house. To be sure, there is the governess, as well as mamma, to look after her manners, and to give her rope enough and not too much; but by the time a girl is seventeen, a governess has ceased to be the autocrat *ex officio*, and she obeys her or not, according to their respective strengths. Still, the governess or mamma is for the most part at her elbow; and Sweet Seventeen, if well brought up, is left very little to her own guidance, and sees the world only through half-opened doors. Girls of this age are often wonderfully sad, and full of a kind of wondering despair at the sin and misery they are learning to know. They take up extreme views in religion, and talk largely on the nothingness of pleasure and the emptiness of the world; and many fair young creatures whom their elders, laden with sorrowful experience, think full of hope and joy, are ready to give up all the pleasures of life, and to lay down life itself, for very disgust of that of which they know nothing. They delight in sorrowful lamentations and sentimental regrets put into rhyme, and one of the funniest things in the world is to see a girl dancing with the merriest in the evening, and to hear her talk brokenheartedness in the morning. It is merely an example of the old proverb about the meeting of extremes, vacuity leading to the same results as experience. But, however she takes this unknown life, it is always in an unreal and romantic aspect. Some of more robust mind delight in the bolder stories of Greece and Rome, and wish they had played a part in the sensational heroism of those grand old times; while others go to Venice, and make pictures for themselves out of the gliding gondolas and the mysterious Council of Ten, the lovely ladies with grim old fathers and grim brothers acting as insufficient gaolers, and the handsome cavaliers serenading them in the moonlight. That is their idea of love. They have no perception of anything warmer. It is all romance, and poetry, and tender glances from afar, and long and patient wooing under difficulties and a little danger, with scarce a word spoken, and nothing more expressive than a flower furtively given, or a fleeting pressure of the finger tips. They know nothing else and expect nothing else. Their cherry is without stone, their bird without bone, their orange without rind, as in the old song; and they imagine a love as unreal as all the rest. When thrown into actualities, though—say when left motherless, and the eldest girl of perhaps a large family with a father to comfort and a young brood to see after—Sweet Seventeen is often very beautiful in her degree, and rises grandly to her position. Sometimes the burdens of her responsibilities is too much for her tender shoulders, and she is overweighted, and fails. Sometimes, too, she is tyrannical and selfish in such a position, and uses her power ill; and sometimes she is careless and good-humored, when they all scramble up together, through confusion, dirt and disorder, till the close time is over and they scatter themselves abroad. Sometimes she is a martyr, and makes herself and every one else uncomfortable by the perpetual demonstrations of her martyrdom, and how she considers herself sacrificed and put upon. Indeed, she is not unfrequently a martyr from other causes than heavy duties, being fond of adopting unworkable views which cannot be got to run in the family groove anyhow. If she falls upon this rock she is in her glory, youth being marvelously proud of this kind of voluntary crucifixion, and thinking itself especially ill used because it must be made comfortable, and is prevented from making itself ridiculous. But Sweet Seventeen is intolerant of all moral differences. What she holds to be right is the absolute, the one sole and only just law; and she thinks it tampering with sin to allow that any one else has an equal right with herself to a contrary opinion. But, on the whole, she is a pleasant, lovable, interesting creature, and one's greatest regret about her is that she is so often in the hands of unsuitable guides, and that her powers and noble impulses get so stunted and shadowed by the commonplace training which is her general lot, and the low aims of life which are the only ones held out to her.—*London Saturday Review.*

MARRIAGE.

Within the bond of Marriage, tell me, Brutus,
Is it excepted, I should know no secrets
That appertain to you? Am I yourself
But, as it were, on sort, or limitation;
To keep with you at meals, comfort your bed,
And talk to you sometimes? Dwell I but in the suburbs
Of your good pleasure? If it be no more,
Portia is Brutus' harlot, not his wife.—*Shakespeare.*

Good farmers plant their fruit trees well, care for them, and of course get good crops.

DOMESTIC RECIPES.

To Improve Starch.—To each bowl of starch, add one teaspoonful of Epsom salts, and dissolve in the usual way by boiling. Articles starched with this will be stiffer, and will be rendered to a certain degree fire-proof.

To Remove Stains from Linen.—To remove wine, fruit or iron stains, wet the spot with a solution of hyposulphite of soda, and sprinkle some pulverized tartaric acid upon it; then wash out as usual. Strong vinegar can be used instead of the tartaric acid.

Moth Powder.—Lupulin (flour of hops), 1 dram; Scotch snuff, 2 oz.; gum camphor, 1 oz.; black pepper, 1 oz.; cedar sawdust, 4 oz. Mix thoroughly, and strew (or put in papers) among the furs or woollen to be protected.

Liquid for Cleaning Silver.—Add gradually 8 oz of prepared chalk to a mixture of 2 oz. of spirits of turpentine, 1 oz. of alcohol, $\frac{1}{2}$ oz. of spirits of camphor, and 2 drams of aqua ammonia. Apply with a soft sponge and allow it to dry before polishing.

To Keep Lemons.—Housekeepers know how quickly lemons lose their freshness, and rot. A simple and inexpensive remedy is to place them in a jar filled with water, the water to be renewed every day or two. By this means the fruit can be kept fresh and sound for several weeks.

Corned Beef.—The *Scientific American* informs the ladies that if they would have corned beef juicy after it is cold, and not as dry as a chip, they should put it into boiling water when they put it on to cook, and they should not take it out of the pot, when done, until cold.

To Whiten Straw Hats.—Scrape stick sulphur with a knife, mix the powder to a mush with water, plaster it thickly over the straw, and place in the hot sun for several hours; brush off when dry. An easy and effectual plan.

Remedy for Cockroaches.—Make a thick batter of equal quantities of red lead and Indian meal mixed with molasses, and set it out for the insects. They will devour it greedily and die. Be careful to have no food setting near the poison. A few doses will exterminate these pests.

Another way.—To exterminate cockroaches, pulverized borax sprinkled about their haunts is said to be an effectual remedy, and not otherwise dangerous.

Sweet Pickled Cucumbers.—Pare one peck of ripe cucumbers, quarter them lengthwise and simmer them in slightly salted water until you can stick a straw through them easily. Then take the fruit out of the water and put in jars. Have ready a syrup made of a pint and a half of good vinegar, four and a half pounds of sugar, and spices to taste, and pour it hot over the cucumbers, cover up and set away in a cool place. In a couple of days pour off the syrup, heat up again and pour hot over the fruit as before. Be careful not to have too much salt in the first process. The rule is, a pound and a half of sugar to every half pint of vinegar for the syrup. A great many of the seed will be left in the water to throw away, and what adheres to the fruit I let alone. I used nutmeg, allspice and cloves, and found the combination agreeable.—*Cor. Ger. Tel.*

COMMERCIAL FERTILIZERS.

The season for procuring supplies of Fertilizers being at hand, we would call the attention of farmers and planters to the following articles manufactured and sold in the Baltimore market. The reputation of the several parties who advertise in our paper is unquestioned as fair dealing and honorable, which is about the only guarantee we can give the purchaser, that he will be dealt with fairly. We call attention to the following, many of which have been reduced in price:

J. J. Turner & Co., Baltimore, offer their "Excelsior," for wheat and tobacco. Also, Ammoniated Bone Superphosphate.

Dugdale & Girvin, Baltimore. Baugh's Raw Bone Phosphate, for the fall crops. Also, Magnum Bonum Soluble Phosphate.

E. G. Edwards, Agent, Baltimore. Whann's Raw Bone Superphosphate.

John S. Reese & Co., Baltimore. Soluble Pacific Guano, made by the Pacific Guano Company.

Moro Phillips, Baltimore. Super-Phosphate of Lime, standard guaranteed. Also, Pure Phosphate.

Laurence Sangston, President, offers the farming interest an Ammoniated Super-Phosphate, manufactured by the Maryland Fertilizing and Manufacturing Company.

B. M. Rhodes & Co. The Rhodes' Super-Phosphate—standard manure. Also, Orchilla Guano, AA, a bird guano. Also, Soluble Ammoniated Sea Guano.

Wm. Crichton & Son, Baltimore. Ammoniated Soluble Super-Phosphate of Lime, for wheat, corn, tobacco, cotton, &c.

E. Whitman & Sons, Baltimore. The Andrew Coe Super-Phosphate of Lime—a standard manure.

R. J. Ruth & Co., Baltimore. Ruth's "Challenge" Soluble Phosphate.

Wm. Reynolds, Baltimore. Bower's Complete Manure, made from Super-Phosphate of Lime, Ammonia and Potash.

Lister Brothers, Newark, N. J. Bone Flour, Ground Bone, and Bone Meal.

Wm. H. Oler, Baltimore. Shell Lime, for agricultural and building purposes.

Joshua Horner, Baltimore, offers Bone Dust in any quantity.

James Webb, Baltimore, offers any quantity of Leached Ashes.

AUGUSTA COUNTY FAIR.—The Third Annual Exhibition of the Augusta County Society will be held on the Fair Grounds, at Staunton, Va., beginning Tuesday, October 19th, to continue three days. Competition is open to all. From the List of Premiums sent us, we infer that the exhibition will be one worthy of the gentlemen who have it in charge, and of the people of that fertile region.

Dr. Pierce's Alt. Ext. or Golden Medical Discovery is not a fancy drink made of poor poisonous strychnine whisky, proof spirits and refuse liquors, spiced and sweetened to please the taste and lead topers on to ruin, as are the so-called "Bitters" of the day; but it is a pure medicinal extract of native roots and herbs, and is a speedy, safe and sure remedy for all severe, acute and lingering coughs, indigestion, loss of appetite, "Liver Complaint" or "Biliousness," and constipation of the bowels. Nothing equals it for purifying the blood. Sold by druggists.

Dr. Sage's Catarrh Remedy is no humbug.

RECEIVED.

From *James Vick, Rochester, N. Y.*, his Illustrated Catalogue of Hardy Bulbs and Floral Guide, embellished, with directions for cultivation, &c. It contains a complete list of every variety of bulbs.

From the Secretary, the Prize List for the Agricultural and Industrial Exhibition, to be held in the city of Montreal, Canada, on September 13th to 15th, to be open to the world.

From *G. E. Cleeton, New Haven, Conn.*, the Annual Directory of Poultry Breeders and Fanciers in the United States and Canada, for 1870, giving the names and residences of the principal breeders, together with the various breeds to which they are giving special attention. Price 25 cents.

From the New York State Society, the Report of *Wm. H. Carmalt, M. D.*, Commissioner of the New York State Agricultural Society for the investigation of Abortion in Cows.

From *Ellwanger & Barry, Rochester, N. Y.*, their No. 1 Descriptive Catalogue of Fruits, cultivated and for sale at the Mount Hope nurseries. Also, No. 2 Descriptive Catalogue of Ornamental Trees, Shrubs, Roses, Flowering Plants, &c.

From *J. B. Bowman, Regent, Catalogue of the Officers and Students of the Kentucky University*, for the Session of 1869-70, with the General Announcement for 1870-71. The book embraces 100 pages, and gives a full description of the university, with very able reports from the Regent Bowman, and others. It is located at Lexington, Ky. For information address as above.

From *S. Boardman & Co., Rochester, N. Y.*, their Descriptive Catalogue of Fruit and Ornamental Trees, Shrubs, Vines, Roses, &c.

From *T. L. Massenburg, Secretary*, the List of Premiums, &c., of the First Annual Fair of the Central Georgia Agricultural and Manufacturing Company, to be held near Macon, Ga., on October 3d to the 8th, 1870.

From *Samuel Phillips, of Kosciusko, Miss.*, Premium List, Rules and Regulations of the Fourth Annual Fair of Attala Agricultural and Mechanics' Association, to be held at Kosciusko, Miss., commencing on Tuesday, October 18th, 1870, continuing four days.

"OLD AND NEW," for August, is received. This is a standard magazine—already takes a high position among the literary periodicals of the day. The list of contributions embrace some of the most eminent writers of this country. Published by Roberts Brothers, Boston. Price \$4 per annum.

THE GALAXY, an Illustrated Magazine. The September No. fully maintains its reputation as one of the very best now published in this country. It is published by Sheldon & Co., New York. Price \$3 a year. Mark Twain the great humorist, is a regular contributor.

THE POULTRY BULLETIN.—The attention of poultry fanciers and breeders of pet stock is called to this monthly, issued by the Executive Committee of the New York State Poultry Society. It is the only journal devoted especially to that interest in this country. Poultry fanciers and breeders of other pet stock, as pigeons, rabbits, song-birds, ponies, dogs, fish-breeding, &c., will find much to interest them. Address the *Poultry Bulletin*, box 316, New York. Price \$1 a year.

The Manufacturer and Builder.—This valuable monthly is received. It is a highly useful periodical, and no one engaged in building and manufacturing should be without it. Published by Western & Co., New York, at \$1.50 per annum.